Tomas Edvinsson

List of Publications by Year
in descending order

102 papers	6,007 citations	116194 36 h-index	84171 75 g-index
105 all docs	105 docs citations	105 times ranked	10584 citing authors

#	Article	IF	Citations
1	Development of Various Photovoltaicâ€Driven Water Electrolysis Technologies for Green Solar Hydrogen Generation. Solar Rrl, 2022, 6, 2100479.	3.1	21
2	Dynamic dimer copper coordination redox shuttles. CheM, 2022, 8, 439-449.	5.8	4
3	Hole utilization in solar hydrogen production. Nature Reviews Chemistry, 2022, 6, 243-258.	13.8	59
4	Copper coordination polymers with selective hole conductivity. Journal of Materials Chemistry A, 2022, 10, 9582-9591.	5.2	9
5	An open-access database and analysis tool for perovskite solar cells based on the FAIR data principles. Nature Energy, 2022, 7, 107-115.	19.8	136
6	Energy Alignment of Quantum-Confined ZnO Particles with Copper Oxides for Heterojunctions with Improved Photocatalytic Performance. ACS Nanoscience Au, 2022, 2, 128-139.	2.0	2
7	Scalable and thermally-integrated solar water-splitting modules using Ag-doped Cu(In,Ga)Se₂ and NiFe layered double hydroxide nanocatalysts. Journal of Materials Chemistry A, 2022, 10, 12079-12091.	5.2	3
8	Nickel Site Modification by High-Valence Doping: Effect of Tantalum Impurities on the Alkaline Water Electro-Oxidation by NiO Probed by Operando Raman Spectroscopy. ACS Catalysis, 2022, 12, 6506-6516.	5.5	25
9	Electrochromic solar water splitting using a cathodic WO3 electrocatalyst. Nano Energy, 2021, 81, 105620.	8.2	19
10	NiMoV and NiO-based catalysts for efficient solar-driven water splitting using thermally integrated photovoltaics in a scalable approach. IScience, 2021, 24, 101910.	1.9	18
11	Polarized and nonâ€polarized Raman spectroscopy of ZnO crystals: Method for determination of crystal growth and crystal plane orientation for nanomaterials. Journal of Raman Spectroscopy, 2021, 52, 1395-1405.	1.2	10
12	An Electrochemical Impedance Study of Alkaline Water Splitting Using Fe Doped NiO Nanosheets. Physchem, 2021, 1, 69-81.	0.5	6
13	Photoinduced Fano Resonances between Quantum Confined Nanocrystals and Adsorbed Molecular Catalysts. Nano Letters, 2021, 21, 5813-5818.	4.5	4
14	Structure and Electronic Effects from Mn and Nb Co-doping for Low Band Gap BaTiO₃ Ferroelectrics. Journal of Physical Chemistry C, 2021, 125, 14910-14923.	1.5	28
15	From NiMoO₄ to Î³-NiOOH: Detecting the Active Catalyst Phase by Time Resolved <i>in Situ</i> and <i>Operando</i> Raman Spectroscopy. ACS Nano, 2021, 15, 13504-13515.	7.3	93
16	Rare-Earth-Modified Titania Nanoparticles: Molecular Insight into Synthesis and Photochemical Properties. Inorganic Chemistry, 2021, 60, 14820-14830.	1.9	9
17	Selective kinetic growth and role of local coordination in forming Al₂TiO₅-based coatings at lower temperatures. Materials Advances, 2021, 2, 5737-5751.	2.6	4
18	Direct Plasmonic Solar Cell Efficiency Dependence on Spiro-OMeTAD Li-TFSI Content. Nanomaterials, 2021, 11, 3329.	1.9	4

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19	Molecular Engineering of Simple Metalâ€Free Organic Dyes Derived from Triphenylamine for Dyeâ€Sensitized Solar Cell Applications. ChemSusChem, 2020, 13, 212-220.	3.6	31
20	X-ray diffraction and Raman spectroscopy for lead halide perovskites. , 2020, , 23-47.		2
21	Time resolved photo-induced optical spectroscopy. , 2020, , 139-160.		2
22	Highly crystalline MAPbI3 perovskite grain formation by irreversible poor-solvent diffusion aggregation, for efficient solar cell fabrication. Nano Energy, 2020, 78, 105346.	8.2	19
23	Molecular Functionalization of NiO Nanocatalyst for Enhanced Water Oxidation by Electronic Structure Engineering. ChemSusChem, 2020, 13, 5901-5909.	3.6	14
24	Extraction of Backscattering and Absorption Coefficients of Magnetite Nanosphere Composites from Light-Scattering Measurements: Implications for Optomagnetic Sensing. ACS Applied Nano Materials, 2020, 3, 11172-11183.	2.4	3
25	Molecular Linking Selectivity on Self-Assembled Metal-Semiconductor Nano-Hybrid Systems. Nanomaterials, 2020, 10, 1378.	1.9	2
26	Large Damping-Like Spinâ€"Orbit Torque in a 2D Conductive 1T-TaS₂ Monolayer. Nano Letters, 2020, 20, 6372-6380.	4.5	31
27	The climatic response of thermally integrated photovoltaicâ€"electrolysis water splitting using Si and CIGS combined with acidic and alkaline electrolysis. Sustainable Energy and Fuels, 2020, 4, 6011-6022.	2.5	13
28	On the Mechanistic Understanding of Photovoltage Loss in Iron Pyrite Solar Cells. Advanced Materials, 2020, 32, e1905653.	11.1	33
29	Flexible transparent graphene laminates <i>via</i> direct lamination of graphene onto polyethylene naphthalate substrates. Nanoscale Advances, 2020, 2, 3156-3163.	2.2	15
30	ZnO nanomaterials: strategies for improvement of photocatalytic and photoelectrochemical activities. , 2020, , 231-244.		4
31	Surface polarity, water adhesion and wettability behaviors of iron pyrite. Materials Today: Proceedings, 2020, 33, 2465-2469.	0.9	3
32	Optical Quantum Confinement in Ultrasmall ZnO and the Effect of Size on Their Photocatalytic Activity. Journal of Physical Chemistry C, 2020, 124, 6395-6404.	1.5	29
33	Biochar for electrochemical applications. Current Opinion in Green and Sustainable Chemistry, 2020, 23, 25-30.	3.2	36
34	Rational design and resolution of the mystery of the structure of Cyclo[18]carbon. Journal of Materials Chemistry A, 2020, 8, 8234-8237.	5.2	19
35	Revisiting the Limiting Factors for Overall Waterâ€Splitting on Organic Photocatalysts. Angewandte Chemie, 2020, 132, 16418-16433.	1.6	9
36	Revisiting the Limiting Factors for Overall Waterâ€Splitting on Organic Photocatalysts. Angewandte Chemie - International Edition, 2020, 59, 16278-16293.	7.2	72

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37	Dye-sensitized solar cells under ambient light powering machine learning: towards autonomous smart sensors for the internet of things. Chemical Science, 2020, 11, 2895-2906.	3.7	200
38	Nature of the excited state in lead iodide perovskite materials: Time-dependent charge density response and the role of the monovalent cation. Physical Review B, 2019, 100, .	1.1	10
39	Green fabrication of stable lead-free bismuth based perovskite solar cells using a non-toxic solvent. Communications Chemistry, 2019, 2, .	2.0	119
40	How to Make a Most Stable Perovskite Solar Cell. Matter, 2019, 1, 562-564.	5.0	13
41	Femtosecond bond breaking and charge dynamics in ultracharged amino acids. Journal of Chemical Physics, 2019, 151, 144307.	1.2	9
42	What Is Limiting Pyrite Solar Cell Performance?. Joule, 2019, 3, 2290-2293.	11.7	21
43	Impedance Spectroscopy Modeling of Nickelâ€“Molybdenum Alloys on Porous and Flat Substrates for Applications in Water Splitting. Journal of Physical Chemistry C, 2019, 123, 23890-23897.	1.5	31
44	In operando Raman investigation of Fe doping influence on catalytic NiO intermediates for enhanced overall water splitting. Nano Energy, 2019, 66, 104118.	8.2	215
45	Direct observation of active catalyst surface phases and the effect of dynamic self-optimization in NiFe-layered double hydroxides for alkaline water splitting. Energy and Environmental Science, 2019, 12, 572-581.	15.6	453
46	A concentrated effort. Nature Energy, 2019, 4, 354-355.	19.8	3
47	Optimum Band Gap Energy of ((Ag),Cu)(InGa)Se2 Materials for Combination with NiMoâ€“NiO Catalysts for Thermally Integrated Solar-Driven Water Splitting Applications. Energies, 2019, 12, 4064.	1.6	9
48	Low-Temperature Nb-Doped SnO₂ Electron-Selective Contact Yields over 20% Efficiency in Planar Perovskite Solar Cells. ACS Energy Letters, 2018, 3, 773-778.	8.8	157
49	Planar Perovskite Solar Cells with High Openâ€Circuit Voltage Containing a Supramolecular Iron Complex as Hole Transport Material Dopant. ChemPhysChem, 2018, 19, 1363-1370.	1.0	17
50	Unravelling in-situ formation of highly active mixed metal oxide CuInO2 nanoparticles during CO2 electroreduction. Nano Energy, 2018, 49, 40-50.	8.2	30
51	Metal replacement in perovskite solar cell materials: chemical bonding effects and optoelectronic properties. Sustainable Energy and Fuels, 2018, 2, 1430-1445.	2.5	78
52	Experimental and Theoretical Investigation of the Function of 4-<i>tert</i>-Butyl Pyridine for Interface Energy Level Adjustment in Efficient Solid-State Dye-Sensitized Solar Cells. ACS Applied Materials & Interfaces, 2018, 10, 11572-11579.	4.0	15
53	Transition metal doping effects in Co-phosphate catalysts for water splitting studied with XAS. Journal of Electron Spectroscopy and Related Phenomena, 2018, 224, 3-7.	0.8	14
54	Optical quantum confinement and photocatalytic properties in two-, one- and zero-dimensional nanostructures. Royal Society Open Science, 2018, 5, 180387.	1.1	127

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55	Electronic Structure of Two-Dimensional Lead(II) Iodide Perovskites: An Experimental and Theoretical Study. Chemistry of Materials, 2018, 30, 4959-4967.	3.2	29
56	Copper Complexes with Tetradentate Ligands for Enhanced Charge Transport in Dye-Sensitized Solar Cells. Inorganics, 2018, 6, 53.	1.2	36
57	An effective approach of vapour assisted morphological tailoring for reducing metal defect sites in lead-free, (CH3NH3)3Bi2I9 bismuth-based perovskite solar cells for improved performance and long-term stability. Nano Energy, 2018, 49, 614-624.	8.2	169
58	Pathways to electrochemical solar-hydrogen technologies. Energy and Environmental Science, 2018, 11, 2768-2783.	15.6	238
59	Effect of <i>in situ</i> electric-field-assisted growth on antiphase boundaries in epitaxial <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi mathvariant="normal">Fe</mml:mi><mml:mn>3</mml:mn></mml:msub><mml:msub><mml:mi mathvariant="normal">O</mml:mi><mml:mn>4</mml:mn></mml:msub></mml:mrow></mml:math> thin films on MgO. Physical Review Materials, 2018, 2, .	0.9	6
60	Hydrogen evolution with nanoengineered ZnO interfaces decorated using a beetroot extract and a hydrogenase mimic. Sustainable Energy and Fuels, 2017, 1, 69-73.	2.5	35
61	Photoinduced Stark Effects and Mechanism of Ion Displacement in Perovskite Solar Cell Materials. ACS Nano, 2017, 11, 2823-2834.	7.3	47
62	Vacancy dipole interactions and the correlation with monovalent cation dependent ion movement in lead halide perovskite solar cell materials. Nano Energy, 2017, 38, 537-543.	8.2	43
63	An experimental and theoretical study of an efficient polymer nano-photocatalyst for hydrogen evolution. Energy and Environmental Science, 2017, 10, 1372-1376.	15.6	192
64	Multifunctional Gadoliniumâ€Doped Mesoporous TiO₂ Nanobeads: Photoluminescence, Enhanced Spin Relaxation, and Reactive Oxygen Species Photogeneration, Beneficial for Cancer Diagnosis and Treatment. Small, 2017, 13, 1700349.	5.2	59
65	Electronic structure of organicâ€“inorganic lanthanide iodide perovskite solar cell materials. Journal of Materials Chemistry A, 2017, 5, 23131-23138.	5.2	28
66	Analysis of crystalline phases and integration modelling of charge quenching yields in hybrid lead halide perovskite solar cell materials. Nano Energy, 2017, 40, 596-606.	8.2	17
67	Disentangling the intricate atomic short-range order and electronic properties in amorphous transition metal oxides. Scientific Reports, 2017, 7, 2044.	1.6	19
68	Photon Energy-Dependent Hysteresis Effects in Lead Halide Perovskite Materials. Journal of Physical Chemistry C, 2017, 121, 26180-26187.	1.5	26
69	Controlled crystal growth orientation and surface charge effects in self-assembled nickel oxide nanoflakes and their activity for the oxygen evolution reaction. International Journal of Hydrogen Energy, 2017, 42, 28397-28407.	3.8	34
70	Resonance Raman and IR spectroscopy of aligned carbon nanotube arrays with extremely narrow diameters prepared with molecular catalysts on steel substrates. Physical Chemistry Chemical Physics, 2017, 19, 30667-30674.	1.3	22
71	Electronic structure dynamics in a low bandgap polymer studied by time-resolved photoelectron spectroscopy. Physical Chemistry Chemical Physics, 2016, 18, 21921-21929.	1.3	11
72	Bismuth Iodide Perovskite Materials for Solar Cell Applications: Electronic Structure, Optical Transitions, and Directional Charge Transport. Journal of Physical Chemistry C, 2016, 120, 29039-29046.	1.5	134

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73	Room Temperature as a Goldilocks Environment for CH₃NH₃PbI₃ Perovskite Solar Cells: The Importance of Temperature on Device Performance. Journal of Physical Chemistry C, 2016, 120, 11382-11393.	1.5	58
74	From Quantum Dots to Micro Crystals: Organolead Triiodide Perovskite Crystal Growth from Isopropanol Solution. ECS Journal of Solid State Science and Technology, 2016, 5, P614-P620.	0.9	6
75	Effect of metal cation replacement on the electronic structure of metalorganic halide perovskites: Replacement of lead with alkaline-earth metals. Physical Review B, 2016, 93, .	1.1	145
76	Frustrated Lewis pair-mediated recrystallization of CH₃NH₃PbI₃ for improved optoelectronic quality and high voltage planar perovskite solar cells. Energy and Environmental Science, 2016, 9, 3770-3782.	15.6	117
77	Acid-catalyzed oligomerization via activated proton transfer to aromatic and unsaturated monomers in Nafion membranes: a step forward in the in situ synthesis of conjugated composite membranes. RSC Advances, 2016, 6, 104782-104792.	1.7	3
78	Electronic transitions induced by short-range structural order in amorphous<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>TiO</mml:mi><mml:mn>2</mml:mn></mml:msub></mm Physical Review B, 2016, 94, .	1.1	27
79	Vapor phase conversion of PbI₂to CH₃NH₃PbI₃: spectroscopic evidence for formation of an intermediate phase. Journal of Materials Chemistry A, 2016, 4, 2630-2642.	5.2	98
80	What Limits Photon Upconversion on Mesoporous Thin Films Sensitized by Solution-Phase Absorbers?. Journal of Physical Chemistry C, 2015, 119, 4550-4564.	1.5	28
81	Resonance Raman and Excitation Energy Dependent Charge Transfer Mechanism in Halide-Substituted Hybrid Perovskite Solar Cells. ACS Nano, 2015, 9, 2088-2101.	7.3	141
82	A theoretical analysis of optical absorption limits and performance of tandem devices and series interconnected architectures for solar hydrogen production. Solar Energy Materials and Solar Cells, 2015, 138, 86-95.	3.0	34
83	Goldschmidtâ€™s Rules and Strontium Replacement in Lead Halogen Perovskite Solar Cells: Theory and Preliminary Experiments on CH₃NH₃SrI₃. Journal of Physical Chemistry C, 2015, 119, 25673-25683.	1.5	211
84	Determination of Thermal Expansion Coefficients and Locating the Temperature-Induced Phase Transition in Methylammonium Lead Perovskites Using X-ray Diffraction. Inorganic Chemistry, 2015, 54, 10678-10685.	1.9	213
85	Chemical engineering of methylammonium lead iodide/bromide perovskites: tuning of opto-electronic properties and photovoltaic performance. Journal of Materials Chemistry A, 2015, 3, 21760-21771.	5.2	96
86	Phase Formation Behavior in Ultrathin Iron Oxide. Langmuir, 2015, 31, 12372-12381.	1.6	7
87	CIGS based devices for solar hydrogen production spanning from PEC-cells to PV-electrolyzers: A comparison of efficiency, stability and device topology. Solar Energy Materials and Solar Cells, 2015, 134, 185-193.	3.0	44
88	Optical quantum confinement in low dimensional hematite. Journal of Materials Chemistry A, 2014, 2, 3352-3363.	5.2	43
89	A size dependent discontinuous decay rate for the exciton emission in ZnO quantum dots. Physical Chemistry Chemical Physics, 2014, 16, 13849-13857.	1.3	36
90	Quantum Confined Stark Effects in ZnO Quantum Dots Investigated with Photoelectrochemical Methods. Journal of Physical Chemistry C, 2014, 118, 12061-12072.	1.5	21

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91	Sustainable solar hydrogen production: from photoelectrochemical cells to PV-electrolyzers and back again. Energy and Environmental Science, 2014, 7, 2056-2070.	15.6	179
92	CuInxGa1â˘xSe2 as an efficient photocathode for solar hydrogen generation. International Journal of Hydrogen Energy, 2013, 38, 15027-15035.	3.8	52
93	A monolithic device for solar water splitting based on series interconnected thin film absorbers reaching over 10% solar-to-hydrogen efficiency. Energy and Environmental Science, 2013, 6, 3676.	15.6	211
94	A Spectroelectrochemical Method for Locating Fluorescence Trap States in Nanoparticles and Quantum Dots. Journal of Physical Chemistry C, 2013, 117, 5497-5504.	1.5	23
95	Antireflective coatings of ZnO quantum dots and their photocatalytic activity. RSC Advances, 2012, 2, 10298.	1.7	29
96	Investigation of Vibrational Modes and Phonon Density of States in ZnO Quantum Dots. Journal of Physical Chemistry C, 2012, 116, 6893-6901.	1.5	37
97	Photoelectrochemical Determination of the Absolute Band Edge Positions as a Function of Particle Size for ZnO Quantum Dots. Journal of Physical Chemistry C, 2012, 116, 15692-15701.	1.5	54
98	Absorption and Fluorescence Spectroscopy of Growing ZnO Quantum Dots: Size and Band Gap Correlation and Evidence of Mobile Trap States. Inorganic Chemistry, 2011, 50, 9578-9586.	1.9	57
99	Comparison of Dye-Sensitized ZnO and TiO2Solar Cells:â€‰ Studies of Charge Transport and Carrier Lifetime. Journal of Physical Chemistry C, 2007, 111, 1035-1041.	1.5	501
100	The monolithic multicell: a tool for testing material components in dye-sensitized solar cells. Progress in Photovoltaics: Research and Applications, 2007, 15, 113-121.	4.4	59
101	Dye-Sensitized Nanostructured ZnO Electrodes for Solar Cell Applications. , 2006, , 227-254.		18
102	Effect of Interface Engineering and Origin of High Current in Planar Inverted Perovskite Solar cells. , 0, , .		0