Yu-Xun Ren

List of Publications by Year
in descending order

#	Article	IF	Citations
1	Non-precious Co3O4 nano-rod electrocatalyst for oxygenreduction reaction in anion-exchange membranefuelcells. Energy and Environmental Science, 2012, 5, 5333-5339.	15.6	487
2	Borophene: A promising anode material offering high specific capacity and high rate capability for lithium-ion batteries. Nano Energy, 2016, 23, 97-104.	8.2	454
3	A high-energy and long-cycling lithiumâ€“sulfur pouch cell via a macroporous catalytic cathode with double-end binding sites. Nature Nanotechnology, 2021, 16, 166-173.	15.6	392
4	Advances and challenges in alkaline anion exchange membrane fuel cells. Progress in Energy and Combustion Science, 2018, 66, 141-175.	15.8	388
5	Novel gel polymer electrolyte for high-performance lithiumâ€“sulfur batteries. Nano Energy, 2016, 22, 278-289.	8.2	382
6	Numerical investigations of flow field designs for vanadium redox flow batteries. Applied Energy, 2013, 105, 47-56.	5.1	264
7	Measurements of Heat Transfer Coefficients From Supercritical Carbon Dioxide Flowing in Horizontal Mini/Micro Channels. Journal of Heat Transfer, 2002, 124, 413-420.	1.2	257
8	A comparative study of all-vanadium and iron-chromium redox flow batteries for large-scale energy storage. Journal of Power Sources, 2015, 300, 438-443.	4.0	251
9	A LATTICE BOLTZMANN MODEL FOR CONVECTION HEAT TRANSFER IN POROUS MEDIA. Numerical Heat Transfer, Part B: Fundamentals, 2005, 47, 157-177.	0.6	239
10	Carbon-neutral sustainable energy technology: Direct ethanol fuel cells. Renewable and Sustainable Energy Reviews, 2015, 50, 1462-1468.	8.2	235
11	Boron phosphide monolayer as a potential anode material for alkali metal-based batteries. Journal of Materials Chemistry A, 2017, 5, 672-679.	5.2	217
12	Mass transport phenomena in direct methanol fuel cells. Progress in Energy and Combustion Science, 2009, 35, 275-292.	15.8	214
13	A high power density and long cycle life vanadium redox flow battery. Energy Storage Materials, 2020, 24, 529-540.	9.5	214
14	The use of polybenzimidazole membranes in vanadium redox flow batteries leading to increased coulombic efficiency and cycling performance. Electrochimica Acta, 2015, 153, 492-498.	2.6	177
15	Copper nanoparticle-deposited graphite felt electrodes for all vanadium redox flow batteries. Applied Energy, 2016, 180, 386-391.	5.1	166
16	First-Principles Study of Nitrogen-, Boron-Doped Graphene and Co-Doped Graphene as the Potential Catalysts in Nonaqueous Liâ€“O₂ Batteries. Journal of Physical Chemistry C, 2016, 120, 6612-6618.	1.5	161
17	A high-performance dual-scale porous electrode for vanadium redox flow batteries. Journal of Power Sources, 2016, 325, 329-336.	4.0	157
18	Critical transport issues for improving the performance of aqueous redox flow batteries. Journal of Power Sources, 2017, 339, 1-12.	4.0	154

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19	Ab initio prediction of a silicene and graphene heterostructure as an anode material for Li- and Na-ion batteries. Journal of Materials Chemistry A, 2016, 4, 16377-16382.	5.2	149
20	A high-performance carbon nanoparticle-decorated graphite felt electrode for vanadium redox flow batteries. Applied Energy, 2016, 176, 74-79.	5.1	145
21	A high-performance flow-field structured iron-chromium redox flow battery. Journal of Power Sources, 2016, 324, 738-744.	4.0	145
22	A nano-structured RuO₂/NiO cathode enables the operation of non-aqueous lithiumâ€“air batteries in ambient air. Energy and Environmental Science, 2016, 9, 1783-1793.	15.6	142
23	Highly catalytic and stabilized titanium nitride nanowire array-decorated graphite felt electrodes for all vanadium redox flow batteries. Journal of Power Sources, 2017, 341, 318-326.	4.0	134
24	Fundamental models for flow batteries. Progress in Energy and Combustion Science, 2015, 49, 40-58.	15.8	133
25	A high-rate and long cycle life solid-state lithiumâ€“air battery. Energy and Environmental Science, 2015, 8, 3745-3754.	15.6	129
26	Alkaline direct oxidation fuel cell with non-platinum catalysts capable of converting glucose to electricity at high power output. Journal of Power Sources, 2011, 196, 186-190.	4.0	128
27	Borophene and defective borophene as potential anchoring materials for lithiumâ€“sulfur batteries: a first-principles study. Journal of Materials Chemistry A, 2018, 6, 2107-2114.	5.2	127
28	Performance of a vanadium redox flow battery with and without flow fields. Electrochimica Acta, 2014, 142, 61-67.	2.6	125
29	A vanadium redox flow battery model incorporating the effect of ion concentrations on ion mobility. Applied Energy, 2015, 158, 157-166.	5.1	118
30	Preparation of silica nanocomposite anion-exchange membranes with low vanadium-ion crossover for vanadium redox flow batteries. Electrochimica Acta, 2013, 105, 584-592.	2.6	113
31	A novel solid-state Liâ€“O₂ battery with an integrated electrolyte and cathode structure. Energy and Environmental Science, 2015, 8, 2782-2790.	15.6	111
32	A highly permeable and enhanced surface area carbon-cloth electrode for vanadium redox flow batteries. Journal of Power Sources, 2016, 329, 247-254.	4.0	111
33	High-performance zinc bromine flow battery via improved design of electrolyte and electrode. Journal of Power Sources, 2017, 355, 62-68.	4.0	111
34	In-situ investigation of hydrogen evolution behavior in vanadium redox flow batteries. Applied Energy, 2017, 190, 1112-1118.	5.1	102
35	High performance of a carbon supported ternary PdIrNi catalyst for ethanol electro-oxidation in anion-exchange membrane direct ethanol fuel cells. Energy and Environmental Science, 2011, 4, 1428.	15.6	101
36	Anion exchange membranes for aqueous acid-based redox flow batteries: Current status and challenges. Applied Energy, 2019, 233-234, 622-643.	5.1	101

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37	Improved electrolyte for zinc-bromine flow batteries. Journal of Power Sources, 2018, 384, 232-239.	4.0	100
38	Rational design of spontaneous reactions for protecting porous lithium electrodes in lithiumâ€“sulfur batteries. Nature Communications, 2019, 10, 3249.	5.8	99
39	Highly efficient and ultra-stable boron-doped graphite felt electrodes for vanadium redox flow batteries. Journal of Materials Chemistry A, 2018, 6, 13244-13253.	5.2	97
40	Performance enhancement of iron-chromium redox flow batteries by employing interdigitated flow fields. Journal of Power Sources, 2016, 327, 258-264.	4.0	93
41	Density Functional Theory Studies of the Structure Sensitivity of Ethanol Oxidation on Palladium Surfaces. Journal of Physical Chemistry C, 2010, 114, 10489-10497.	1.5	92
42	Highly stable pyridinium-functionalized cross-linked anion exchange membranes for all vanadium redox flow batteries. Journal of Power Sources, 2016, 331, 452-461.	4.0	92
43	Anion-exchange membrane direct ethanol fuel cells: Status and perspective. Frontiers of Energy and Power Engineering in China, 2010, 4, 443-458.	0.4	89
44	Modeling of lithium-sulfur batteries incorporating the effect of Li2S precipitation. Journal of Power Sources, 2016, 336, 115-125.	4.0	87
45	Highly catalytic hollow Ti3C2Tx MXene spheres decorated graphite felt electrode for vanadium redox flow batteries. Energy Storage Materials, 2020, 25, 885-892.	9.5	87
46	An alkaline direct ethanol fuel cell with a cation exchange membrane. Energy and Environmental Science, 2011, 4, 2213.	15.6	85
47	The effects of design parameters on the charge-discharge performance of iron-chromium redox flow batteries. Applied Energy, 2016, 182, 204-209.	5.1	83
48	Towards a uniform distribution of zinc in the negative electrode for zinc bromine flow batteries. Applied Energy, 2018, 213, 366-374.	5.1	83
49	An efficient Li2S-based lithium-ion sulfur battery realized by a bifunctional electrolyte additive. Nano Energy, 2017, 40, 240-247.	8.2	81
50	Physicochemical properties of alkaline doped polybenzimidazole membranes for anion exchange membrane fuel cells. Journal of Membrane Science, 2015, 493, 340-348.	4.1	77
51	Highly active, bi-functional and metal-free B 4 C-nanoparticle-modified graphite felt electrodes for vanadium redox flow batteries. Journal of Power Sources, 2017, 365, 34-42.	4.0	75
52	In-situ Fabrication of a Freestanding Acrylate-based Hierarchical Electrolyte for Lithium-sulfur Batteries. Electrochimica Acta, 2016, 213, 871-878.	2.6	74
53	A high-performance supportless silver nanowire catalyst for anion exchange membrane fuel cells. Journal of Materials Chemistry A, 2015, 3, 1410-1416.	5.2	73
54	A uniformly distributed bismuth nanoparticle-modified carbon cloth electrode for vanadium redox flow batteries. Applied Energy, 2019, 240, 226-235.	5.1	73

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55	New DMFC Anode Structure Consisting of Platinum Nanowires Deposited into a Nafion Membrane. Journal of Physical Chemistry C, 2007, 111, 8128-8134.	1.5	71
56	Modeling and Simulation of Flow Batteries. Advanced Energy Materials, 2020, 10, 2000758.	10.2	66
57	Achieving multiplexed functionality in a hierarchical MXene-based sulfur host for high-rate, high-loading lithium-sulfur batteries. Energy Storage Materials, 2020, 33, 147-157.	9.5	64
58	Charge carriers in alkaline direct oxidation fuel cells. Energy and Environmental Science, 2012, 5, 7536.	15.6	63
59	Ab initio prediction and characterization of phosphorene-like SiS and SiSe as anode materials for sodium-ion batteries. Science Bulletin, 2017, 62, 572-578.	4.3	61
60	Oscillatory Heat Transfer in a Pipe Subjected to a Laminar Reciprocating Flow. Journal of Heat Transfer, 1996, 118, 592-597.	1.2	60
61	Mesoporous carbon with uniquely combined electrochemical and mass transport characteristics for polymer electrolyte membrane fuel cells. RSC Advances, 2013, 3, 16-24.	1.7	60
62	A highly-safe lithium-ion sulfur polymer battery with SnO2 anode and acrylate-based gel polymer electrolyte. Nano Energy, 2016, 28, 97-105.	8.2	60
63	A high-performance sandwiched-porous polybenzimidazole membrane with enhanced alkaline retention for anion exchange membrane fuel cells. Energy and Environmental Science, 2015, 8, 2768-2774.	15.6	59
64	A room-temperature activated graphite felt as the cost-effective, highly active and stable electrode for vanadium redox flow batteries. Applied Energy, 2019, 233-234, 544-553.	5.1	59
65	Determination of the mass-transport properties of vanadium ions through the porous electrodes of vanadium redox flow batteries. Physical Chemistry Chemical Physics, 2013, 15, 10841.	1.3	54
66	A gradient porous cathode for non-aqueous lithium-air batteries leading to a high capacity. Electrochemistry Communications, 2014, 46, 111-114.	2.3	54
67	Formation of electrodes by self-assembling porous carbon fibers into bundles for vanadium redox flow batteries. Journal of Power Sources, 2018, 405, 106-113.	4.0	54
68	Carbonized tubular polypyrrole with a high activity for the Br2/Brâˆ' redox reaction in zinc-bromine flow batteries. Electrochimica Acta, 2018, 284, 569-576.	2.6	54
69	A highly active biomass-derived electrode for all vanadium redox flow batteries. Electrochimica Acta, 2017, 248, 197-205.	2.6	53
70	A Lattice BGK Scheme with General Propagation. Journal of Scientific Computing, 2001, 16, 569-585.	1.1	52
71	A transient electrochemical model incorporating the Donnan effect for all-vanadium redox flow batteries. Journal of Power Sources, 2015, 299, 202-211.	4.0	52
72	Nonequilibrium scheme for computing the flux of the convection-diffusion equation in the framework of the lattice Boltzmann method. Physical Review E, 2014, 90, 013305.	0.8	50

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73	Unraveling the Positive Roles of Point Defects on Carbon Surfaces in Nonaqueous Lithiumâ€“Oxygen Batteries. Journal of Physical Chemistry C, 2016, 120, 18394-18402.	1.5	50
74	Graphene sheets fabricated from disposable paper cups as a catalyst support material for fuel cells. Journal of Materials Chemistry A, 2013, 1, 183-187.	5.2	49
75	A gradient porous electrode with balanced transport properties and active surface areas for vanadium redox flow batteries. Journal of Power Sources, 2019, 440, 227159.	4.0	49
76	Prediction of the theoretical capacity of non-aqueous lithium-air batteries. Applied Energy, 2013, 109, 275-282.	5.1	48
77	Two-dimensional SiS as a potential anode material for lithium-based batteries: A first-principles study. Journal of Power Sources, 2016, 331, 391-399.	4.0	46
78	Polyvinylpyrrolidone-based semi-interpenetrating polymer networks as highly selective and chemically stable membranes for all vanadium redox flow batteries. Journal of Power Sources, 2016, 327, 374-383.	4.0	46
79	A self-cleaning Li-S battery enabled by a bifunctional redox mediator. Journal of Power Sources, 2017, 361, 203-210.	4.0	46
80	An aqueous manganese-copper battery for large-scale energy storage applications. Journal of Power Sources, 2019, 423, 203-210.	4.0	46
81	Remedies of capacity fading in room-temperature sodium-sulfur batteries. Journal of Power Sources, 2018, 396, 304-313.	4.0	45
82	Towards uniform distributions of reactants via the aligned electrode design for vanadium redox flow batteries. Applied Energy, 2020, 259, 114198.	5.1	45
83	A low-cost iron-cadmium redox flow battery for large-scale energy storage. Journal of Power Sources, 2016, 330, 55-60.	4.0	44
84	A trifunctional electrolyte for high-performance zinc-iodine flow batteries. Journal of Power Sources, 2021, 484, 229238.	4.0	44
85	A hydrogen-ferric ion rebalance cell operating at low hydrogen concentrations for capacity restoration of iron-chromium redox flow batteries. Journal of Power Sources, 2017, 352, 77-82.	4.0	42
86	A bi-porous graphite felt electrode with enhanced surface area and catalytic activity for vanadium redox flow batteries. Applied Energy, 2019, 233-234, 105-113.	5.1	41
87	A modified aggregation based model for the accurate prediction of particle distribution and viscosity in magnetic nanofluids. Powder Technology, 2015, 283, 561-569.	2.1	40
88	A RuO₂ nanoparticle-decorated buckypaper cathode for non-aqueous lithiumâ€“oxygen batteries. Journal of Materials Chemistry A, 2015, 3, 19042-19049.	5.2	40
89	An aqueous alkaline battery consisting of inexpensive all-iron redox chemistries for large-scale energy storage. Applied Energy, 2018, 215, 98-105.	5.1	40
90	Mesoporous carbon derived from pomelo peel as a high-performance electrode material for zinc-bromine flow batteries. Journal of Power Sources, 2019, 442, 227255.	4.0	40

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91	Modeling of lithiumâ€"oxygen batteries with the discharge product treated as a discontinuous deposit layer. Journal of Power Sources, 2015, 273, 440-447.	4.0	39
92	A low-cost, high-performance zincâ€"hydrogen peroxide fuel cell. Journal of Power Sources, 2015, 275, 831-834.	4.0	38
93	Discharge product morphology versus operating temperature in non-aqueous lithium-air batteries. Journal of Power Sources, 2015, 278, 133-140.	4.0	36
94	Cost-effective carbon supported Fe2O3 nanoparticles as an efficient catalyst for non-aqueous lithium-oxygen batteries. Electrochimica Acta, 2016, 211, 545-551.	2.6	35
95	Aligned microfibers interweaved with highly porous carbon nanofibers: A Novel electrode for high-power vanadium redox flow batteries. Energy Storage Materials, 2021, 43, 30-41.	9.5	35
96	A micro-porous current collector enabling passive direct methanol fuel cells to operate with highly concentrated fuel. Electrochimica Acta, 2014, 139, 7-12.	2.6	34
97	Modeling of anisotropic flow and thermodynamic properties of magnetic nanofluids induced by external magnetic field with varied imposing directions. Journal of Applied Physics, 2015, 118, .	1.1	34
98	Sodiumâ€"Sulfur Batteries Enabled by a Protected Inorganic/Organic Hybrid Solid Electrolyte. ACS Energy Letters, 2021, 6, 345-353.	8.8	34
99	Enhanced cycle life of vanadium redox flow battery via a capacity and energy efficiency recovery method. Journal of Power Sources, 2020, 478, 228725.	4.0	33
100	A high-performance ethanolâ€"hydrogen peroxide fuel cell. RSC Advances, 2014, 4, 65031-65034.	1.7	32
101	Balancing the specific surface area and mass diffusion property of electrospun carbon fibers to enhance the cell performance of vanadium redox flow battery. International Journal of Hydrogen Energy, 2020, 45, 12565-12576.	3.8	31
102	Chloride ions as an electrolyte additive for high performance vanadium redox flow batteries. Applied Energy, 2021, 289, 116690.	5.1	30
103	A novel iron-lead redox flow battery for large-scale energy storage. Journal of Power Sources, 2017, 346, 97-102.	4.0	29
104	A highly-efficient composite polybenzimidazole membrane for vanadium redox flow battery. Journal of Power Sources, 2021, 489, 229502.	4.0	29
105	Aligned hierarchical electrodes for high-performance aqueous redox flow battery. Applied Energy, 2020, 271, 115235.	5.1	28
106	A Selfâ€Healable Sulfide/Polymer Composite Electrolyte for Longâ€Life, Lowâ€Lithiumâ€Excess Lithiumâ€Metal Batteries. Advanced Functional Materials, 2022, 32, 2106680.	7.8	28
107	Facile preparation of high-performance MnO2/KB air cathode for Zn-air batteries. Electrochimica Acta, 2016, 222, 1438-1444.	2.6	26
108	Flow Batteries: Modeling and Simulation of Flow Batteries (Adv. Energy Mater. 31/2020). Advanced Energy Materials, 2020, 10, 2070133.	10.2	26

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109	Investigation and modeling of CPC based tubular photocatalytic reactor for scaled-up hydrogen production. International Journal of Hydrogen Energy, 2016, 41, 16019-16031.	3.8	25
110	A Lithium/Polysulfide Battery with Dual-Working Mode Enabled by Liquid Fuel and Acrylate-Based Gel Polymer Electrolyte. ACS Applied Materials & Interfaces, 2017, 9, 2526-2534.	4.0	24
111	Machine learning-assisted design of flow fields for redox flow batteries. Energy and Environmental Science, 2022, 15, 2874-2888.	15.6	23
112	High-performance nitrogen-doped titania nanowire decorated carbon cloth electrode for lithium-polysulfide batteries. Electrochimica Acta, 2017, 242, 137-145.	2.6	22
113	Modeling of an aprotic Li-O2 battery incorporating multiple-step reactions. Applied Energy, 2017, 187, 706-716.	5.1	22
114	Computational insights into the effect of carbon structures at the atomic level for non-aqueous sodium-oxygen batteries. Journal of Power Sources, 2016, 325, 91-97.	4.0	21
115	Mn₃O₄ Nanoparticleâ€Decorated Carbon Cloths with Superior Catalytic Activity for the V^{II}/V^{III} Redox Reaction in Vanadium Redox Flow Batteries. Energy Technology, 2018, 6, 1228-1236.	1.8	20
116	Mathematical modeling of the charging process of Li-S batteries by incorporating the size-dependent Li2S dissolution. Electrochimica Acta, 2019, 296, 954-963.	2.6	20
117	Artificial Bifunctional Protective layer Composed of Carbon Nitride Nanosheets for High Performance Lithiumâ€“Sulfur Batteries. Journal of Energy Storage, 2019, 26, 101006.	3.9	19
118	A safe and efficient lithiated silicon-sulfur battery enabled by a bi-functional composite interlayer. Energy Storage Materials, 2020, 25, 217-223.	9.5	19
119	A stabilized high-energy Li-polyiodide semi-liquid battery with a dually-protected Li anode. Journal of Power Sources, 2017, 347, 136-144.	4.0	17
120	A Nafion/polybenzimidazole composite membrane with consecutive proton-conducting pathways for aqueous redox flow batteries. Journal of Materials Chemistry A, 2022, 10, 13021-13030.	5.2	17
121	Simulation of fluid flows in the nanometer: kinetic approach and molecular dynamic simulation. International Journal of Computational Fluid Dynamics, 2006, 20, 361-367.	0.5	15
122	An aprotic lithium/polyiodide semi-liquid battery with an ionic shield. Journal of Power Sources, 2017, 342, 9-16.	4.0	15
123	Investigation of an aqueous rechargeable battery consisting of manganese tin redox chemistries for energy storage. Journal of Power Sources, 2019, 437, 226918.	4.0	14
124	Deciphering the exceptional kinetics of hierarchical nitrogen-doped carbon electrodes for high-performance vanadium redox flow batteries. Journal of Materials Chemistry A, 2022, 10, 5605-5613.	5.2	14
125	A detachable sandwiched polybenzimidazole-based membrane for high-performance aqueous redox flow batteries. Journal of Power Sources, 2022, 526, 231139.	4.0	14
126	Anodeâ€Free Lithiumâ€“Sulfur Cells Enabled by Rationally Tuning Lithium Polysulfide Molecules. Angewandte Chemie - International Edition, 2022, 61, .	7.2	13

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127	On-Site Fluorination for Enhancing Utilization of Lithium in a Lithiumâ€“Sulfur Full Battery. ACS Applied Materials & Interfaces, 2020, 12, 53860-53868.	4.0	12
128	Asymmetric Porous Polybenzimidazole Membranes with High Conductivity and Selectivity for Vanadium Redox Flow Batteries. Energy Technology, 2020, 8, 2000592.	1.8	12
129	Elasticity-oriented design of solid-state batteries: challenges and perspectives. Journal of Materials Chemistry A, 2021, 9, 13804-13821.	5.2	12
130	Variations of Buoyancy-Induced Mass Flux From Single-Phase to Two-Phase Flow in a Vertical Porous Tube With Constant Heat Flux. Journal of Heat Transfer, 1999, 121, 646-652.	1.2	10
131	Parameciumâ€Like Iron Oxide Nanotubes as a Costâ€Efficient Catalyst for Nonaqueous Lithiumâ€Oxygen Batteries. Energy Technology, 2018, 6, 263-272.	1.8	10
132	Operating Highâ€Energy Lithiumâ€Metal Pouch Cells with Reduced Stack Pressure Through a Rational Lithiumâ€Host Design. Advanced Energy Materials, 2022, 12, .	10.2	10
133	A Numerical Study of Laminar Reciprocating Flow in a Pipe of Finite Length. Flow, Turbulence and Combustion, 1997, 59, 11-25.	0.2	9
134	Recent progress in understanding of coupled heat/mass transport and electrochemical reactions in fuel cells. International Journal of Energy Research, 2011, 35, 15-23.	2.2	9
135	An<i>in situ</i>encapsulation approach for polysulfide retention in lithiumâ€“sulfur batteries. Journal of Materials Chemistry A, 2020, 8, 6902-6907.	5.2	9
136	A high-performance lithiated siliconâ€“sulfur battery enabled by fluorinated ether electrolytes. Journal of Materials Chemistry A, 2021, 9, 25426-25434.	5.2	7
137	Manipulation of Electrode Composition for Effective Water Management in Fuel Cells Fed with an Electrically Rechargeable Liquid Fuel. ACS Applied Materials & Interfaces, 2022, 14, 18600-18606.	4.0	5
138	Anodeâ€Free Lithiumâ€“Sulfur Cells Enabled by Rationally Tuning Lithium Polysulfide Molecules. Angewandte Chemie, 2022, 134, .	1.6	5
139	A Li₂Sâ€Based Sacrificial Layer for Stable Operation of Lithiumâ€Sulfur Batteries. Energy Technology, 2018, 6, 2210-2219.	1.8	4
140	Study on particle and photonic flux distributions in a magnetically stirred photocatalytic reactor. Journal of Photonics for Energy, 2015, 5, 052097.	0.8	3