

# Piotr Zelenay

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

77 papers	18,072 citations	43 h-index	119 g-index
119 ext. papers	20,031 ext. citations	13 avg, IF	7.05 L-index

#	Paper	IF	Citations
77	Electrocatalysis in Alkaline Media and Alkaline Membrane-Based Energy Technologies.. <i>Chemical Reviews</i> , <b>2022</b> ,	68.1	25
76	Quantifying the electrochemical active site density of precious metal-free catalysts in situ in fuel cells. <i>Nature Catalysis</i> , <b>2022</b> , 5, 163-170	36.5	9
75	Porphyrin Aerogel Catalysts for Oxygen Reduction Reaction in Anion-Exchange Membrane Fuel Cells. <i>Advanced Functional Materials</i> , <b>2021</b> , 31, 2100963	15.6	24
74	Elucidating fuel cell catalyst degradation mechanisms by identical-location transmission electron microscopy. <i>Microscopy and Microanalysis</i> , <b>2021</b> , 27, 974-976	0.5	1
73	Status and challenges for the application of platinum group metal-free catalysts in proton-exchange membrane fuel cells. <i>Current Opinion in Electrochemistry</i> , <b>2021</b> , 25, 100627	7.2	22
72	Detection Technologies for Reactive Oxygen Species: Fluorescence and Electrochemical Methods and Their Applications. <i>Biosensors</i> , <b>2021</b> , 11,	5.9	18
71	Comment on Non-PGM electrocatalysts for PEM fuel cells: effect of fluorination on the activity and stability of a highly active NC_Ar + NH <sub>3</sub> catalyst by Gaixia Zhang, Xiaohua Yang, Marc Dubois, Michael Herraiz, Rgis Chenitz, Michel Lefvre, Mohamed Cherif, Franbis Vidal, Vassili P. Glibin, Shuhui Sun and Jean-Pol Dodelet. <i>Energy Environ. Sci.</i> , 2019, 12, 3015B037, 10.1039/C9EE00867E.	35.4	2
70	Performance enhancement and degradation mechanism identification of a single-atom CoN <sub>4</sub> C catalyst for proton exchange membrane fuel cells. <i>Nature Catalysis</i> , <b>2020</b> , 3, 1044-1054	36.5	186
69	Understanding water management in platinum group metal-free electrodes using neutron imaging. <i>Journal of Power Sources</i> , <b>2020</b> , 472, 228442-228442	8.9	6
68	Preparation of Nonprecious Metal Electrocatalysts for the Reduction of Oxygen Using a Low-Temperature Sacrificial Metal. <i>Journal of the American Chemical Society</i> , <b>2020</b> , 142, 5477-5481	16.4	62
67	CommunicationOn the Lack of Correlation between the Voltammetric Redox Couple and ORR Activity of Fe-N-C Catalysts. <i>Journal of the Electrochemical Society</i> , <b>2020</b> , 167, 134510	3.9	2
66	ElectroCat (Electrocatalysis Consortium) <b>2020</b> ,		9
65	Recent progress in the durability of Fe-N-C oxygen reduction electrocatalysts for polymer electrolyte fuel cells. <i>Journal of Electroanalytical Chemistry</i> , <b>2020</b> , 875, 114696	4.1	20
64	Acid Stability and Demetalation of PGM-Free ORR Electrocatalyst Structures from Density Functional Theory: A Model for Bingle-Atom CatalystDissolution. <i>ACS Catalysis</i> , <b>2020</b> , 10, 14527-14539	13.1	43
63	Coupling High-Throughput Experiments and Regression Algorithms to Optimize PGM-Free ORR Electrocatalyst Synthesis. <i>ACS Applied Energy Materials</i> , <b>2020</b> , 3, 9083-9088	6.1	11
62	Nitrogen-Doped Graphene Oxide Electrocatalysts for the Oxygen Reduction Reaction. <i>ACS Applied Nano Materials</i> , <b>2019</b> , 2, 1675-1682	5.6	47
61	PGM-Free ORR Catalysts Designed by Templating PANI-Type Polymers Containing Functional Groups with High Affinity to Iron. <i>Journal of the Electrochemical Society</i> , <b>2019</b> , 166, F3240-F3245	3.9	14

60	High-performance fuel cell cathodes exclusively containing atomically dispersed iron active sites. <i>Energy and Environmental Science</i> , <b>2019</b> , 12, 2548-2558	35.4	280
59	Experimental and Theoretical Trends of PGM-Free Electrocatalysts for the Oxygen Reduction Reaction with Different Transition Metals. <i>Journal of the Electrochemical Society</i> , <b>2019</b> , 166, F3136-F3142	3.9	26
58	2,2'-Dipyridylamine as Heterogeneous Organic Molecular Electrocatalyst for Two-Electron Oxygen Reduction Reaction in Acid Media. <i>ACS Applied Energy Materials</i> , <b>2019</b> , 2, 7272-7278	6.1	10
57	Resolving Active Sites in Atomically Dispersed Electrocatalysts for Energy Conversion Applications. <i>Microscopy and Microanalysis</i> , <b>2019</b> , 25, 2066-2067	0.5	1
56	Fe-N-C Catalysts: Progress in the Development of Fe-Based PGM-Free Electrocatalysts for the Oxygen Reduction Reaction (Adv. Mater. 31/2019). <i>Advanced Materials</i> , <b>2019</b> , 31, 1970224	24	12
55	Elucidation of Fe-N-C electrocatalyst active site functionality via in-situ X-ray absorption and operando determination of oxygen reduction reaction kinetics in a PEFC. <i>Applied Catalysis B: Environmental</i> , <b>2019</b> , 257, 117929	21.8	45
54	PGM-Free Cathode Catalysts for PEM Fuel Cells: A Mini-Review on Stability Challenges. <i>Advanced Materials</i> , <b>2019</b> , 31, e1807615	24	267
53	Progress in the Development of Fe-Based PGM-Free Electrocatalysts for the Oxygen Reduction Reaction. <i>Advanced Materials</i> , <b>2019</b> , 31, e1806545	24	207
52	ElectroCat: DOE's approach to PGM-free catalyst and electrode R&D. <i>Solid State Ionics</i> , <b>2018</b> , 319, 68-76	3.3	82
51	Durability challenges and perspective in the development of PGM-free electrocatalysts for the oxygen reduction reaction. <i>Current Opinion in Electrochemistry</i> , <b>2018</b> , 9, 224-232	7.2	104
50	Anion exchange membrane fuel cells: Current status and remaining challenges. <i>Journal of Power Sources</i> , <b>2018</b> , 375, 170-184	8.9	486
49	Highly Graphitic Mesoporous Fe,N-Doped Carbon Materials for Oxygen Reduction Electrochemical Catalysts. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2018</b> , 10, 25337-25349	9.5	33
48	(Invited) Kinetic Models for the Degradation Mechanisms of PGM-Free ORR Catalysts. <i>ECS Transactions</i> , <b>2018</b> , 85, 1239-1250	1	35
47	Elucidation of role of graphene in catalytic designs for electroreduction of oxygen. <i>Current Opinion in Electrochemistry</i> , <b>2018</b> , 9, 257-264	7.2	28
46	Pore-scale study of multiphase reactive transport in fibrous electrodes of vanadium redox flow batteries. <i>Electrochimica Acta</i> , <b>2017</b> , 248, 425-439	6.7	44
45	Direct atomic-level insight into the active sites of a high-performance PGM-free ORR catalyst. <i>Science</i> , <b>2017</b> , 357, 479-484	33.3	920
44	A Combined Probe-Molecule, Mössbauer, Nuclear Resonance Vibrational Spectroscopy, and Density Functional Theory Approach for Evaluation of Potential Iron Active Sites in an Oxygen Reduction Reaction Catalyst. <i>Journal of Physical Chemistry C</i> , <b>2017</b> , 121, 16283-16290	3.8	60
43	Ternary PtRuPd/C Catalyst for High-Performance, Low-Temperature Direct Dimethyl Ether Fuel Cells. <i>ChemElectroChem</i> , <b>2016</b> , 3, 1564-1569	4.3	16

42	Resolving Electrode Morphology's Impact on Platinum Group Metal-Free Cathode Performance Using Nano-CT of 3D Hierarchical Pore and Ionomer Distribution. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2016</b> , 8, 32764-32777	9.5	75
41	Critical role of intercalated water for electrocatalytically active nitrogen-doped graphitic systems. <i>Science Advances</i> , <b>2016</b> , 2, e1501178	14.3	30
40	Linking structure to function: The search for active sites in non-platinum group metal oxygen reduction reaction catalysts. <i>Nano Energy</i> , <b>2016</b> , 29, 54-64	17.1	92
39	A simple synthesis of nitrogen-doped carbon micro- and nanotubes. <i>Chemical Communications</i> , <b>2015</b> , 51, 13546-9	5.8	22
38	High-Activity PtRuPd/C Catalyst for Direct Dimethyl Ether Fuel Cells. <i>Angewandte Chemie</i> , <b>2015</b> , 127, 7634-7638	3.6	12
37	High-activity PtRuPd/C catalyst for direct dimethyl ether fuel cells. <i>Angewandte Chemie - International Edition</i> , <b>2015</b> , 54, 7524-8	16.4	29
36	Experimental Observation of Redox-Induced Fe-N Switching Behavior as a Determinant Role for Oxygen Reduction Activity. <i>ACS Nano</i> , <b>2015</b> , 9, 12496-505	16.7	374
35	Lattice Boltzmann Pore-Scale Investigation of Coupled Physical-electrochemical Processes in C/Pt and Non-Precious Metal Cathode Catalyst Layers in Proton Exchange Membrane Fuel Cells. <i>Electrochimica Acta</i> , <b>2015</b> , 158, 175-186	6.7	88
34	Ozonated graphene oxide film as a proton-exchange membrane. <i>Angewandte Chemie - International Edition</i> , <b>2014</b> , 53, 3588-93	16.4	173
33	Phosphate-Tolerant Oxygen Reduction Catalysts. <i>ACS Catalysis</i> , <b>2014</b> , 4, 3193-3200	13.1	100
32	Role of two carbon phases in oxygen reduction reaction on the CoBPpy/C catalyst. <i>International Journal of Hydrogen Energy</i> , <b>2014</b> , 39, 15887-15893	6.7	22
31	Direct Dimethyl Ether Fuel Cell with Much Improved Performance. <i>Electrocatalysis</i> , <b>2014</b> , 5, 310-317	2.7	22
30	Structure of Fe <sub>N</sub> C Defects in Oxygen Reduction Reaction Catalysts from First-Principles Modeling. <i>Journal of Physical Chemistry C</i> , <b>2014</b> , 118, 14388-14393	3.8	145
29	Ozonated Graphene Oxide Film as a Proton-Exchange Membrane. <i>Angewandte Chemie</i> , <b>2014</b> , 126, 3662-3667	3.6	9
28	Stability of iron species in heat-treated polyaniline/iron-carbon polymer electrolyte fuel cell cathode catalysts. <i>Electrochimica Acta</i> , <b>2013</b> , 110, 282-291	6.7	115
27	Active and stable carbon nanotube/nanoparticle composite electrocatalyst for oxygen reduction. <i>Nature Communications</i> , <b>2013</b> , 4, 1922	17.4	699
26	Nanostructured nonprecious metal catalysts for oxygen reduction reaction. <i>Accounts of Chemical Research</i> , <b>2013</b> , 46, 1878-89	24.3	875
25	Nitrogen-doped graphene-rich catalysts derived from heteroatom polymers for oxygen reduction in nonaqueous lithium-O <sub>2</sub> battery cathodes. <i>ACS Nano</i> , <b>2012</b> , 6, 9764-76	16.7	443

24	Multitechnique Characterization of a Polyaniline-Iron-Carbon Oxygen Reduction Catalyst. <i>Journal of Physical Chemistry C</i> , <b>2012</b> , 116, 16001-16013	3.8	336
23	Graphene-Riched Co <sub>9</sub> S <sub>8</sub> -N-C Non-Precious Metal Catalyst for Oxygen Reduction in Alkaline Media. <i>ECS Transactions</i> , <b>2011</b> , 41, 1709-1717	1	74
22	Recent advances in non-precious metal catalysis for oxygen-reduction reaction in polymer electrolyte fuel cells. <i>Energy and Environmental Science</i> , <b>2011</b> , 4, 114-130	35.4	1311
21	Synthesis-structure-performance correlation for polyaniline-Me <sub>6</sub> T non-precious metal cathode catalysts for oxygen reduction in fuel cells. <i>Journal of Materials Chemistry</i> , <b>2011</b> , 21, 11392		480
20	High-performance electrocatalysts for oxygen reduction derived from polyaniline, iron, and cobalt. <i>Science</i> , <b>2011</b> , 332, 443-7	33.3	3271
19	Theoretical Study of Possible Active Site Structures in Cobalt- Polypyrrole Catalysts for Oxygen Reduction Reaction. <i>Journal of Physical Chemistry C</i> , <b>2011</b> , 115, 16672-16680	3.8	65
18	Titanium dioxide-supported non-precious metal oxygen reduction electrocatalyst. <i>Chemical Communications</i> , <b>2010</b> , 46, 7489-91	5.8	119
17	A class of non-precious metal composite catalysts for fuel cells <b>2010</b> , 247-250		7
16	Highly methanol-tolerant non-precious metal cathode catalysts for direct methanol fuel cell. <i>Electrochimica Acta</i> , <b>2010</b> , 55, 7615-7621	6.7	59
15	The effect of diluting ruthenium by iron in Ru <sub>x</sub> Se <sub>y</sub> catalyst for oxygen reduction. <i>Electrochimica Acta</i> , <b>2010</b> , 55, 7575-7580	6.7	17
14	Cyanamide-derived non-precious metal catalyst for oxygen reduction. <i>Electrochemistry Communications</i> , <b>2010</b> , 12, 1792-1795	5.1	123
13	Synthesis and Evaluation of Heat-treated, Cyanamide-derived Non-precious Catalysts for Oxygen Reduction. <i>ECS Transactions</i> , <b>2009</b> , 25, 485-492	1	31
12	Performance Durability of Polyaniline-derived Non-precious Cathode Catalysts. <i>ECS Transactions</i> , <b>2009</b> , 25, 1299-1311	1	132
11	Direct Measurement of IR-Free Individual-Electrode Overpotentials in Polymer Electrolyte Fuel Cells. <i>Journal of Physical Chemistry C</i> , <b>2007</b> , 111, 6512-6523	3.8	24
10	Scientific aspects of polymer electrolyte fuel cell durability and degradation. <i>Chemical Reviews</i> , <b>2007</b> , 107, 3904-51	68.1	2627
9	Electrochemical Impedance Spectroscopy for Direct Methanol Fuel Cell Diagnostics. <i>Journal of the Electrochemical Society</i> , <b>2006</b> , 153, A1902	3.9	76
8	A class of non-precious metal composite catalysts for fuel cells. <i>Nature</i> , <b>2006</b> , 443, 63-6	50.4	1807
7	Ruthenium Crossover in Direct Methanol Fuel Cell with Pt-Ru Black Anode. <i>Journal of the Electrochemical Society</i> , <b>2004</b> , 151, A2053	3.9	237

6	Ceftibuten: Development of a Commercial Process Based on Cephalosporin C. Part IV. Pilot-Plant Scale Electrochemical Reduction of 3-Acetoxymethyl-7(R)-glutaroylaminoceph-3-em-4-carboxylic Acid 1(S)-Oxide. <i>Organic Process Research and Development</i> , <b>2002</b> , 6, 178-183	3.9	15
5	Recent advances in direct methanol fuel cells at Los Alamos National Laboratory. <i>Journal of Power Sources</i> , <b>2000</b> , 86, 111-116	8.9	614
4	Radiometric and voltammetric study of benzoic acid adsorption on a polycrystalline silver electrode. <i>Electrochimica Acta</i> , <b>1998</b> , 43, 1963-1968	6.7	8
3	Radiochemical Assay of Adsorption at Single Crystal/Solution Interfaces. <i>Journal of the Electrochemical Society</i> , <b>1992</b> , 139, 2552-2558	3.9	49
2	Radioactive labeling study of bisulfate adsorption on copper adatoms deposited on the gold electrode in neutral media. <i>Surface Science</i> , <b>1991</b> , 256, 253-263	1.8	44
1	Adsorption of acetic acid on platinum, gold and rhodium electrodes. <i>Electrochimica Acta</i> , <b>1981</b> , 26, 1111-1119	4.7	56