

# Raphaël Chattot

## List of Publications by Year in descending order

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Version: 2024-02-01

40  
papers

1,634  
citations

361045

20  
h-index

329751

37  
g-index

42  
all docs

42  
docs citations

42  
times ranked

2376  
citing authors

#	ARTICLE	IF	CITATIONS
1	Surface distortion as a unifying concept and descriptor in oxygen reduction reaction electrocatalysis. <i>Nature Materials</i> , 2018, 17, 827-833.	13.3	344
2	Beyond Strain and Ligand Effects: Microstrain-Induced Enhancement of the Oxygen Reduction Reaction Kinetics on Various PtNi/C Nanostructures. <i>ACS Catalysis</i> , 2017, 7, 398-408.	5.5	140
3	Tuning the Performance and the Stability of Porous Hollow PtNi/C Nanostructures for the Oxygen Reduction Reaction. <i>ACS Catalysis</i> , 2015, 5, 5333-5341.	5.5	125
4	Defects do Catalysis: CO Monolayer Oxidation and Oxygen Reduction Reaction on Hollow PtNi/C Nanoparticles. <i>ACS Catalysis</i> , 2016, 6, 4673-4684.	5.5	107
5	Benefits and limitations of Pt nanoparticles supported on highly porous antimony-doped tin dioxide aerogel as alternative cathode material for proton-exchange membrane fuel cells. <i>Applied Catalysis B: Environmental</i> , 2017, 201, 381-390.	10.8	70
6	Oxygen Evolution Reaction Activity and Stability Benchmarks for Supported and Unsupported IrO <sub>2</sub> Electrocatalysts. <i>ACS Catalysis</i> , 2021, 11, 4107-4116.	5.5	69
7	Porous Hollow PtNi/C Electrocatalysts: Carbon Support Considerations To Meet Performance and Stability Requirements. <i>ACS Catalysis</i> , 2018, 8, 893-903.	5.5	67
8	A Review on Recent Developments and Prospects for the Oxygen Reduction Reaction on Hollow Pt-alloy Nanoparticles. <i>ChemPhysChem</i> , 2018, 19, 1552-1567.	1.0	64
9	Implementing Structural Disorder as a Promising Direction for Improving the Stability of PtNi/C Nanoparticles. <i>ACS Catalysis</i> , 2017, 7, 3072-3081.	5.5	61
10	Tailoring the Oxygen Reduction Activity of Pt Nanoparticles through Surface Defects: A Simple Top-Down Approach. <i>ACS Catalysis</i> , 2020, 10, 3131-3142.	5.5	50
11	Manipulating the Corrosion Resistance of SnO <sub>2</sub> Aerogels through Doping for Efficient and Durable Oxygen Evolution Reaction Electrocatalysis in Acidic Media. <i>ACS Catalysis</i> , 2020, 10, 7283-7294.	5.5	49
12	Atomic-Scale Snapshots of the Formation and Growth of Hollow PtNi/C Nanocatalysts. <i>Nano Letters</i> , 2017, 17, 2447-2453.	4.5	40
13	X-ray transparent proton-exchange membrane fuel cell design for in situ wide and small angle scattering tomography. <i>Journal of Power Sources</i> , 2019, 437, 226906.	4.0	35
14	Disclosing Pt-Bimetallic Alloy Nanoparticle Surface Lattice Distortion with Electrochemical Probes. <i>ACS Energy Letters</i> , 2020, 5, 162-169.	8.8	35
15	Closing the loop: life cycle assessment and optimization of a PEMFC platinum-based catalyst recycling process. <i>Green Chemistry</i> , 2020, 22, 1919-1933.	4.6	32
16	Building Practical Descriptors for Defect Engineering of Electrocatalytic Materials. <i>ACS Catalysis</i> , 2020, 10, 9046-9056.	5.5	30
17	Impact of Carbon N-Doping and Pyridinic-N Content on the Fuel Cell Performance and Durability of Carbon-Supported Pt Nanoparticle Catalysts. <i>ACS Applied Materials &amp; Interfaces</i> , 2022, 14, 18420-18430.	4.0	28
18	Activity and Durability of Platinum-Based Electrocatalysts Supported on Bare or Fluorinated Nanostructured Carbon Substrates. <i>Journal of the Electrochemical Society</i> , 2018, 165, F3346-F3358.	1.3	27

#	ARTICLE	IF	CITATIONS
19	Imaging Heterogeneous Electrocatalyst Stability and Decoupling Degradation Mechanisms in Operating Hydrogen Fuel Cells. <i>ACS Energy Letters</i> , 2021, 6, 2742-2749.	8.8	26
20	Effect of Atomic Vacancies on the Structure and the Electrocatalytic Activity of Pt-rich/C Nanoparticles: A Combined Experimental and Density Functional Theory Study. <i>ChemCatChem</i> , 2017, 9, 2324-2338.	1.8	23
21	Disentangling the Degradation Pathways of Highly Defective PtNi/C Nanostructures – An Operando Wide and Small Angle X-ray Scattering Study. <i>ACS Catalysis</i> , 2019, 9, 160-167.	5.5	22
22	Electrochemical Strain Dynamics in Noble Metal Nanocatalysts. <i>Journal of the American Chemical Society</i> , 2021, 143, 17068-17078.	6.6	22
23	Electrochemical transformation of Fe-N-C catalysts into iron oxides in alkaline medium and its impact on the oxygen reduction reaction activity. <i>Applied Catalysis B: Environmental</i> , 2022, 311, 121366.	10.8	22
24	Probing the Dynamics of Platinum Surface Oxides in Fuel Cell Catalyst Layers Using in Situ X-ray Diffraction. <i>ACS Applied Energy Materials</i> , 2019, 2, 7772-7780.	2.5	20
25	Elucidating the Mechanisms Driving the Aging of Porous Hollow PtNi/C Nanoparticles by Means of CO <sub>2</sub> Stripping. <i>ACS Applied Materials &amp; Interfaces</i> , 2017, 9, 25298-25307.	4.0	19
26	Decoupling catalyst aggregation, ripening, and coalescence processes inside operating fuel cells. <i>Journal of Power Sources</i> , 2022, 521, 230851.	4.0	18
27	Structure-Activity Relationships for the Oxygen Reduction Reaction in Porous Hollow PtNi/C Nanoparticles. <i>ChemElectroChem</i> , 2016, 3, 1591-1600.	1.7	16
28	Mass spectrometry to quantify and compare the gas barrier properties of radiation grafted membranes and Nafion®. <i>Journal of Membrane Science</i> , 2014, 472, 55-66.	4.1	15
29	Tracking the Catalyst Layer Depth-Dependent Electrochemical Degradation of a Bimodal Pt/C Fuel Cell Catalyst: A Combined <i>Operando</i> Small- and Wide-Angle X-ray Scattering Study. <i>ACS Catalysis</i> , 2022, 12, 2077-2085.	5.5	15
30	FeNi <sub>3</sub> and Ni-Based Nanoparticles as Electrocatalysts for Magnetically Enhanced Alkaline Water Electrolysis. <i>Electrocatalysis</i> , 2020, 11, 567-577.	1.5	14
31	Ageing studies of a PEM Fuel Cell stack developed for reformat fuel operation in 1/4 CHP units: Development of an accelerated degradation procedure. <i>International Journal of Hydrogen Energy</i> , 2015, 40, 5367-5374.	3.8	7
32	Optimization of Extended-Surface PtNi Nanowire Oxygen Reduction Electrocatalysts Produced via Atomic Layer Deposition. <i>ACS Applied Energy Materials</i> , 2022, 5, 4587-4602.	2.5	7
33	Highly Active and Stable Large Mo-Doped Pt-Ni Octahedral Catalysts for ORR: Synthesis, Post-treatments, and Electrochemical Performance and Stability. <i>ACS Applied Materials &amp; Interfaces</i> , 2022, 14, 29690-29702.	4.0	6
34	Stochastic models of dense or hollow nanoparticles and their scattering properties. <i>Journal of Applied Crystallography</i> , 2020, 53, 811-823.	1.9	3
35	(Invited) Porous Hollow PtNi/C Nanoparticles and Their Many Facets. <i>ECS Transactions</i> , 2017, 80, 731-741.	0.3	2
36	Towards comprehensive understanding of proton-exchange membrane fuel cells using high energy x-rays. <i>JPhys Energy</i> , 2021, 3, 031003.	2.3	2

#	ARTICLE	IF	CITATIONS
37	(Invited) Benchmarking Oxygen Evolution Reaction Activity and Stability of Unsupported and Supported IrO <sub>x</sub> Nanoparticles. ECS Meeting Abstracts, 2021, MA2021-01, 1920-1920.	0.0	0
38	(Invited) Promoting Surface Distortion for Improved Fuel Cell Electrocatalysis. ECS Meeting Abstracts, 2019, .	0.0	0
39	Shedding Synchrotron Light on Catalyst Strain Dynamics in Electrochemical Environment. ECS Meeting Abstracts, 2022, MA2022-01, 2115-2115.	0.0	0
40	(Invited) Benchmarking Oxygen Evolution Reaction Activity and Stability of Unsupported and Supported IrO <sub>x</sub> Nanoparticles. ECS Meeting Abstracts, 2022, MA2022-01, 1754-1754.	0.0	0