Nejc Hodnik

List of Publications by Year
in descending order

120	4,582	73894 38	91511 65
papers	citations	h-index	g-index

137	137	137	5256
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Iridium nanoparticles for oxygen evolution reaction on carbon and TiO2 supports from a Raman perspective. International Journal of Hydrogen Energy, 2025, 100, 214-221.	9.2	0
2	Structureâ€“Stability Relationships in Pt-Alloy Nanoparticles Using Identical-Location Four-Dimensional Scanning Transmission Electron Microscopy and Unsupervised Machine Learning. ACS Nano, 2025, 19, 2334-2344.	15.4	1
3	The role of nanoporosity in oxygen reduction reaction under elevated mass transport: Porous vs core-shell. Journal of Catalysis, 2025, 443, 115960.	6.5	0
4	Be Aware of Transient Dissolution Processes in Co₃O₄ Acidic Oxygen Evolution Reaction Electrocatalysts. Journal of the American Chemical Society, 2025, 147, 3517-3528.	15.7	1
5	The role of high-resolution transmission electron microscopy and aberration corrected scanning transmission electron microscopy in unraveling the structureâ€“property relationships of Pt-based fuel cells electrocatalysts. Inorganic Chemistry Frontiers, 2024, 11, 323-341.	6.3	5
6	Enhancing oxygen evolution functionality through anodization and nitridation of compositionally complex alloy. Materials Today Chemistry, 2024, 35, 101835.	3.9	2
7	Advanced electrochemical methods for characterization of proton exchange membrane electrocatalysts. , 2024, , 49-90.		1
8	Metalâ€“Support Interaction between Titanium Oxynitride and Pt Nanoparticles Enables Efficient Low-Pt-Loaded High-Performance Electrodes at Relevant Oxygen Reduction Reaction Current Densities. ACS Catalysis, 2024, 14, 2473-2486.	12.7	7
9	Enhancing oxygen evolution functionality through anodization and nitridation of compositionally complex alloy. Materials Today Chemistry, 2024, 35, 101835.	3.9	0
10	Adjusting the Operational Potential Window as a Tool for Prolonging the Durability of Carbon-Supported Pt-Alloy Nanoparticles as Oxygen Reduction Reaction Electrocatalysts. ACS Catalysis, 2024, 14, 4303-4317.	12.7	6
11	Allotrope-dependent activity-stability relationships of molybdenum sulfide hydrogen evolution electrocatalysts. Nature Communications, 2024, 15, .	14.1	13
12	Ni-MoO2 Composite Coatings Electrodeposited at Porous Ni Substrate as Efficient Alkaline Water Splitting Cathodes. Coatings, 2024, 14, 1026.	2.6	0
13	Origins of Nanoalloy Catalysts Degradation during Membrane Electrode Assembly Fabrication. ACS Energy Letters, 2024, 9, 5251-5258.	17.5	0
14	Fundamental and Practical Aspects of Breakâ€in/Conditioning of Proton Exchange Membrane Fuel Cells. Chemical Record, 2024, 24, .	6.9	2
15	Alternative and facile production pathway towards obtaining high surface area PtCo/C intermetallic catalysts for improved PEM fuel cell performance. RSC Advances, 2023, 13, 4601-4611.	4.5	8
16	Determination of the Electroactive Surface Area of Supported Ir-Based Oxygen Evolution Catalysts by Impedance Spectroscopy: Observed Anomalies with Respect to Catalyst Loading. Journal of the Electrochemical Society, 2023, 170, 044504.	3.1	10
17	Towards electrochemical iridium recycling in acidic media: effect of the presence of organic molecules and chloride ions. RSC Advances, 2023, 13, 7980-7987.	4.5	4
18	Nanotubular TiO_xN_y-Supported Ir Single Atoms and Clusters as Thin-Film Electrocatalysts for Oxygen Evolution in Acid Media. Chemistry of Materials, 2023, 35, 2612-2623.	6.9	12

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19	Sustainable CO₂-Derived Nanoscale Carbon Support to a Platinum Catalyst for Oxygen Reduction Reaction. ACS Applied Nano Materials, 2023, 6, 5772-5780.	5.4	8
20	â€œNano Labâ€•Advanced Characterization Platform for Studying Electrocatalytic Iridium Nanoparticles Dispersed on TiO_xN_y Supports Prepared on Ti Transmission Electron Microscopy Grids. ACS Applied Nano Materials, 2023, 6, 10421-10430.	5.4	5
21	Mechanistic Study of Fast Performance Decay of PtCu Alloy-based Catalyst Layers for Polymer Electrolyte Fuel Cells through Electrochemical Impedance Spectroscopy. Materials, 2023, 16, 3544.	2.9	2
22	Intrinsic properties of nanoparticulate Ir-based catalysts for oxygen evolution reaction by AC voltammetry. Electrochimica Acta, 2023, 464, 142882.	5.4	4
23	Periodic anti-phase boundaries and crystal superstructures in PtCu3 nanoparticles as fuel cell electrocatalysts. Materials Today Nano, 2023, 23, 100377.	5.2	4
24	Robust SrTiO₃ Passivation of Silicon Photocathode by Reduced Graphene Oxide for Solar Water Splitting. ACS Applied Materials & Interfaces, 2023, 15, 44482-44492.	8.1	6
25	Impact of the Catalyst Type and Dopant Composition on the Performance of High-Temperature PEM Fuel Cell. ECS Meeting Abstracts, 2023, MA2023-01, 1759-1759.	0.0	1
26	A Deeper Insight into Stability of Pt-Alloy Nanoparticles as Oxygen Reduction Reaction Electrocatalysts. ECS Meeting Abstracts, 2023, MA2023-02, 1986-1986.	0.0	0
27	Suppressing Platinum Electrocatalyst Degradation via a High-Surface-Area Organic Matrix Support. ACS Omega, 2022, 7, 3540-3548.	4.4	7
28	Benchmarking Fuel Cell Electrocatalysts Using Gas Diffusion Electrodes: Inter-lab Comparison and Best Practices. ACS Energy Letters, 2022, 7, 816-826.	17.5	82
29	Interâ€relationships between Oxygen Evolution and Iridium Dissolution Mechanisms. Angewandte Chemie, 2022, 134, .	1.5	1
30	Interâ€relationships between Oxygen Evolution and Iridium Dissolution Mechanisms. Angewandte Chemie - International Edition, 2022, 61, .	15.0	87
31	Understanding the Crucial Significance of the Temperature and Potential Window on the Stability of Carbon Supported Pt-Alloy Nanoparticles as Oxygen Reduction Reaction Electrocatalysts. ACS Catalysis, 2022, 12, 101-115.	12.7	52
32	Bringing into play automated electron microscopy data processing for understanding nanoparticulate electrocatalystsâ€™ structureâ€“property relationships. Current Opinion in Electrochemistry, 2022, 35, 101052.	4.7	6
33	Importance of Chemical Activation and the Effect of Low Operation Voltage on the Performance of Pt-Alloy Fuel Cell Electrocatalysts. ACS Applied Energy Materials, 2022, 5, 8862-8877.	5.4	25
34	Microstructure and Electrical Conductivity of Electrospun Titanium Oxynitride Carbon Composite Nanofibers. Nanomaterials, 2022, 12, 2177.	4.2	3
35	Atomically-resolved structural changes of ceramic supported nanoparticulate oxygen evolution reaction Ir catalyst. Electrochimica Acta, 2022, 426, 140800.	5.4	9
36	Graphene-Derived Carbon Support Boosts Proton Exchange Membrane Fuel Cell Catalyst Stability. ACS Catalysis, 2022, 12, 9540-9548.	12.7	22

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37	Supported Iridiumâ€based Oxygen Evolution Reaction Electrocatalysts â€•Recent Developments. ChemCatChem, 2022, 14, .	3.6	26
38	Improving the HER Activity and Stability of Pt Nanoparticles by Titanium Oxynitride Support. ACS Catalysis, 2022, 12, 13021-13033.	12.7	70
39	Electrochemically-grown Chloride-free Cu2O nanocubes favorably electroreduce CO2 to Methane: The interplay of appropriate electrochemical protocol. Electrochimica Acta, 2022, 436, 141458.	5.4	9
40	Stability challenges of carbon-supported Pt-nanoalloys as fuel cell oxygen reduction reaction electrocatalysts. Chemical Communications, 2022, 58, 13832-13854.	4.2	24
41	Iridium Stabilizes Ceramic Titanium Oxynitride Support for Oxygen Evolution Reaction. ACS Catalysis, 2022, 12, 15135-15145.	12.7	8
42	Electrochemical Stability and Degradation Mechanisms of Commercial Carbon-Supported Gold Nanoparticles in Acidic Media. Journal of Physical Chemistry C, 2021, 125, 635-647.	3.2	19
43	Resolving the nanoparticles' structure-property relationships at the atomic level: a study of Pt-based electrocatalysts. IScience, 2021, 24, 102102.	3.8	68
44	Reconstruction of Copper Nanoparticles at Electrochemical CO₂ Reduction Reaction Conditions Occurs via Twoâ€step Dissolution/Redeposition Mechanism. ChemElectroChem, 2021, 8, 2634-2639.	3.0	32
45	High-surface-area organic matrix tris(aza)pentacene supported platinum nanostructures as selective electrocatalyst for hydrogen oxidation/evolution reaction and suppressive for oxygen reduction reaction. International Journal of Hydrogen Energy, 2021, 46, 25039-25049.	9.2	4
46	Electrocatalytic effects of Pt-based nanoparticles studied with advanced identical location electron microscopy. Microscopy and Microanalysis, 2021, 27, 2458-2458.	0.5	0
47	Enhancing Iridium Nanoparticlesâ€™ Oxygen Evolution Reaction Activity and Stability by Adjusting the Coverage of Titanium Oxynitride Flakes on Reduced Graphene Oxide Nanoribbonsâ€™ Support. Advanced Materials Interfaces, 2021, 8, .	4.2	10
48	Observing, tracking and analysing electrochemically induced atomic-scale structural changes of an individual Pt-Co nanoparticle as a fuel cell electrocatalyst by combining modified floating electrode and identical location electron microscopy. Electrochimica Acta, 2021, 388, 138513.	5.4	23
49	Sacrificial Cu Layer Mediated the Formation of an Active and Stable Supported Iridium Oxygen Evolution Reaction Electrocatalyst. ACS Catalysis, 2021, 11, 12510-12519.	12.7	25
50	Effect of the Morphology of the High-Surface-Area Support on the Performance of the Oxygen-Evolution Reaction for Iridium Nanoparticles. ACS Catalysis, 2021, 11, 670-681.	12.7	50
51	Electrochemical stability and degradation of commercial Rh/C catalyst in acidic media. Electrochimica Acta, 2021, 400, 139435.	5.4	6
52	Temperature dependent model of carbon supported platinum fuel cell catalyst degradation. Journal of Power Sources, 2021, 514, 230542.	8.0	17
53	Toward the Continuous Production of Multigram Quantities of Highly Uniform Supported Metallic Nanoparticles and Their Application for Synthesis of Superior Intermetallic Pt-Alloy ORR Electrocatalysts. ACS Applied Energy Materials, 2021, 4, 13819-13829.	5.4	25
54	Reconstruction of Copper Nanoparticles at Electrochemical CO2 Reduction Conditions: Identical Location Scanning Electron Microscopy (IL-SEM) Study. , 2021, , .		0

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55	Electrochemical Stability and Degradation of Commercial Pd/C Catalyst in Acidic Media. Journal of Physical Chemistry C, 2021, 125, 27534-27542.	3.2	23
56	Increasing the Oxygen-Evolution Reaction Performance of Nanotubular Titanium Oxynitride-Supported Ir Nanoparticles by a Strong Metalâ€“Support Interaction. ACS Catalysis, 2020, 10, 13688-13700.	12.7	65
57	Atomistic Insights into the Stability of Pt Single-Atom Electrocatalysts. Journal of the American Chemical Society, 2020, 142, 15496-15504.	15.7	87
58	Assembly of Pt Nanoparticles on Graphitized Carbon Nanofibers as Hierarchically Structured Electrodes. ACS Applied Nano Materials, 2020, 3, 9880-9888.	5.4	13
59	What is the trigger for the hydrogen evolution reaction? â€“ towards electrocatalysis beyond the Sabatier principle. Physical Chemistry Chemical Physics, 2020, 22, 8768-8780.	2.8	48
60	Stability and Degradation Mechanisms of Copperâ€Based Catalysts for Electrochemical CO₂ Reduction. Angewandte Chemie, 2020, 132, 14844-14854.	1.5	125
61	Stability and Degradation Mechanisms of Copperâ€Based Catalysts for Electrochemical CO₂ Reduction. Angewandte Chemie - International Edition, 2020, 59, 14736-14746.	15.0	368
62	The Importance of Temperature and Potential Window in Stability Evaluation of Supported Pt-Based Oxygen Reduction Reaction Electrocatalysts in Thin Film Rotating Disc Electrode Setup. Journal of the Electrochemical Society, 2020, 167, 114506.	3.1	23
63	Ir/TiON_x/C high-performance oxygen evolution reaction nanocomposite electrocatalysts in acidic media: synthesis, characterization and electrochemical benchmarking protocol. JPhys Energy, 2020, 2, 02LT01.	5.0	13
64	Modified Floating Electrode Apparatus for Advanced Characterization of Oxygen Reduction Reaction Electrocatalysts. Journal of the Electrochemical Society, 2020, 167, 166501.	3.1	35
65	Controlling the radical-induced redox chemistry inside a liquid-cell TEM. Chemical Science, 2019, 10, 8735-8743.	7.5	44
66	Methodology for Investigating Electrochemical Gas Evolution Reactions: Floating Electrode as a Means for Effective Gas Bubble Removal. Analytical Chemistry, 2019, 91, 10353-10356.	6.7	27
67	Insights into thermal annealing of highly-active PtCu3/C Oxygen Reduction Reaction electrocatalyst: An in-situ heating transmission Electron microscopy study. Nano Energy, 2019, 63, 103892.	16.3	45
68	Insight on Single Cell Proton Exchange Membrane Fuel Cell Performance of Pt-Cu/C Cathode. Catalysts, 2019, 9, 544.	3.8	16
69	Towards Stable and Conductive Titanium Oxynitride Highâ€Surfaceâ€Area Support for Iridium Nanoparticles as Oxygen Evolution Reaction Electrocatalyst. ChemCatChem, 2019, 11, 5038-5044.	3.6	30
70	Synthesis and Advanced Electrochemical Characterization of Multifunctional Electrocatalytic Composite for Unitized Regenerative Fuel Cell. ACS Catalysis, 2019, 9, 11468-11483.	12.7	23
71	Activeâ€Site Imprinting: Preparation of Feâ€“Nâ€“C Catalysts from Zinc Ionâ€“Templated Ionothermal Nitrogenâ€Doped Carbons. Advanced Energy Materials, 2019, 9, .	22.7	70
72	A Doubleâ€Passivation Waterâ€Based Galvanic Displacement Method for Reproducible Gramâ€Scale Production of Highâ€Performance Platinumâ€Alloy Electrocatalysts. Angewandte Chemie, 2019, 131, 13400-13404.	1.5	17

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73	A Doubleâ€Passivation Waterâ€Based Galvanic Displacement Method for Reproducible Gramâ€Scale Production of Highâ€Performance Platinumâ€Alloy Electrocatalysts. Angewandte Chemie - International Edition, 2019, 58, 13266-13270.	15.0	30
74	Comparison of Ptâ€“Cu/C with Benchmark Ptâ€“Co/C: Metal Dissolution and Their Surface Interactions. ACS Applied Energy Materials, 2019, 2, 3131-3141.	5.4	61
75	Atomically Resolved Anisotropic Electrochemical Shaping of Nano-electrocatalyst. Nano Letters, 2019, 19, 4919-4927.	8.8	37
76	Spot the difference at the nanoscale: identical location electron microscopy in electrocatalysis. Current Opinion in Electrochemistry, 2019, 15, 73-82.	4.7	57
77	CO-assisted ex-situ chemical activation of Pt-Cu/C oxygen reduction reaction electrocatalyst. Electrochimica Acta, 2019, 306, 377-386.	5.4	39
78	Effect of Particle Size on the Corrosion Behaviour of Gold in the Presence of Chloride Impurities: An EFC-ICP-MS Potentiodynamic Study. Coatings, 2019, 9, 10.	2.6	19
79	Atomic Scale Insights into Electrochemical Dissolution of Janus Ptâ€“SnO₂ Nanoparticles in the Presence of Ethanol in Acidic Media: An IL-STEM and EFCâ€“ICPâ€“MS Study. Journal of Physical Chemistry C, 2018, 122, 10050-10058.	3.2	17
80	Cutting the Gordian Knot of electrodeposition via controlled cathodic corrosion enabling the production of supported metal nanoparticles below 5â€¯nm. Applied Catalysis B: Environmental, 2018, 226, 396-402.	20.3	29
81	In situ electrochemical dissolution of platinum and gold in organic-based solvent. Npj Materials Degradation, 2018, 2, .	6.9	11
82	Platinum Dissolution and Redeposition from Pt/C Fuel Cell Electrocatalyst at Potential Cycling. Journal of the Electrochemical Society, 2018, 165, F3161-F3165.	3.1	89
83	Solid oxide fuel cells fed with dry ethanol: The effect of a perovskite protective anodic layer containing dispersed Ni-alloy @ FeOx core-shell nanoparticles. Applied Catalysis B: Environmental, 2018, 220, 98-110.	20.3	73
84	Successful Synthesis of Gold Nanoparticles through Ultrasonic Spray Pyrolysis from a Gold(III) Nitrate Precursor and Their Interaction with a High Electron Beam. ChemistryOpen, 2018, 7, 533-542.	2.7	35
85	Stability study of silver nanoparticles towards the halide electroreduction. Electrochimica Acta, 2018, 286, 123-130.	5.4	15
86	Corrosion Protection of Platinum-Based Electrocatalyst by Ruthenium Surface Decoration. ACS Applied Energy Materials, 2018, 1, 3190-3197.	5.4	5
87	Insights into electrochemical dealloying of Cu out of Au-doped Pt-alloy nanoparticles at the sub-nano-scale. Journal of Electrochemical Science and Engineering, 2018, 8, 87-100.	5.7	13
88	Gold Doping in PtCu₃/HSAC Nanoparticles and Their Morphological, Structural, and Compositional Changes during Oxygen Reduction Reaction Electrochemical Cycling. ChemCatChem, 2017, 9, 3904-3911.	3.6	12
89	New insights into the stability of a high performance nanostructured catalyst for sustainable water electrolysis. Nano Energy, 2017, 40, 618-632.	16.3	132
90	Importance of non-intrinsic platinum dissolution in Pt/C composite fuel cell catalysts. Physical Chemistry Chemical Physics, 2017, 19, 21446-21452.	2.8	46

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91	Increase of electrodeposited catalyst stability via plasma grown vertically oriented graphene nanoparticle movement restriction. Chemical Communications, 2017, 53, 9340-9343.	4.2	14
92	Electrochemical Dissolution of Iridium and Iridium Oxide Particles in Acidic Media: Transmission Electron Microscopy, Electrochemical Flow Cell Coupled to Inductively Coupled Plasma Mass Spectrometry, and X-ray Absorption Spectroscopy Study. Journal of the American Chemical Society, 2017, 139, 12837-12846.	15.7	209
93	Atomically Resolved Dealloying of Structurally Ordered Pt Nanoalloy as an Oxygen Reduction Reaction Electrocatalyst. ACS Catalysis, 2016, 6, 5530-5534.	12.7	71
94	Potentiodynamic dissolution study of PtRu/C electrocatalyst in the presence of methanol. Electrochimica Acta, 2016, 211, 851-859.	5.4	40
95	Electrochemical in-situ dissolution study of structurally ordered, disordered and gold doped PtCu3 nanoparticles on carbon composites. Journal of Power Sources, 2016, 327, 675-680.	8.0	32
96	Importance and Challenges of Electrochemical in Situ Liquid Cell Electron Microscopy for Energy Conversion Research. Accounts of Chemical Research, 2016, 49, 2015-2022.	17.7	201
97	Platinum recycling going green via induced surface potential alteration enabling fast and efficient dissolution. Nature Communications, 2016, 7, .	14.1	61
98	Structureâ€“Activityâ€“Stability Relationships for Space-Confined Pt_xNi_y Nanoparticles in the Oxygen Reduction Reaction. ACS Catalysis, 2016, 6, 8058-8068.	12.7	60
99	Positive Effect of Surface Doping with Au on the Stability of Pt-Based Electrocatalysts. ACS Catalysis, 2016, 6, 1630-1634.	12.7	95
100	Multielectrode Teflon electrochemical nanocatalyst investigation system. MethodsX, 2015, 2, 204-210.	1.8	0
101	Evaluation of Oxygen Reduction Activity of Non-Ideal Pt Based Catalyst Thin Films. ECS Transactions, 2015, 68, 141-152.	0.7	1
102	Stability of Dealloyed Porous Pt/Ni Nanoparticles. ACS Catalysis, 2015, 5, 5000-5007.	12.7	117
103	The Effect of the Voltage Scan Rate on the Determination of the Oxygen Reduction Activity of Pt/C Fuel Cell Catalyst. Electrocatalysis, 2015, 6, 237-241.	2.6	38
104	New Insights into Corrosion of Ruthenium and Ruthenium Oxide Nanoparticles in Acidic Media. Journal of Physical Chemistry C, 2015, 119, 10140-10147.	3.2	192
105	Dissolution of Platinum in the Operational Range of Fuel Cells. ChemElectroChem, 2015, 2, 1471-1478.	3.0	166
106	Activation of carbon-supported catalysts by ozonized acidic solutions for the direct implementation in (electro-)chemical reactors. Chemical Communications, 2015, 51, 1226-1229.	4.2	14
107	SEM method for direct visual tracking of nanoscale morphological changes of platinum based electrocatalysts on fixed locations upon electrochemical or thermal treatments. Ultramicroscopy, 2014, 140, 44-50.	2.3	31
108	New Insight into Platinum Dissolution from Nanoparticulate Platinumâ€Based Electrocatalysts Using Highly Sensitive Inâ€…Situ Concentration Measurements. ChemCatChem, 2014, 6, 449-453.	3.6	123

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109	A highly active PtCu₃ intermetallic coreâ€“shell, multilayered Pt-skin, carbon embedded electrocatalyst produced by a scale-up solâ€“gel synthesis. Chemical Communications, 2014, 50, 13124-13126.	4.2	77
110	The influence of chloride impurities on Pt/C fuel cell catalyst corrosion. Chemical Communications, 2014, 50, 3732-3734.	4.2	71
111	Effect of ordering of PtCu₃nanoparticle structure on the activity and stability for the oxygen reduction reaction. Physical Chemistry Chemical Physics, 2014, 16, 13610-13615.	2.8	124
112	In-situ TEM and Atomic-Resolution STEM Study of Highly Active Partially Ordered Cu3Pt Nanoparticles used as PEM-Fuel Cells Catalyst. Microscopy and Microanalysis, 2014, 20, 476-477.	0.5	0
113	Time Evolution of the Stability and Oxygen Reduction Reaction Activity of PtCu/C Nanoparticles. ChemCatChem, 2013, 5, 2627-2635.	3.6	29
114	Severe accelerated degradation of PEMFC platinum catalyst: A thin film IL-SEM study. Electrochemistry Communications, 2013, 30, 75-78.	3.9	58
115	New Pt-skin electrocatalysts for oxygen reduction and methanol oxidation reactions. Electrochemistry Communications, 2012, 23, 125-128.	3.9	38
116	Identical Location Scanning Electron Microscopy: A Case Study of Electrochemical Degradation of PtNi Nanoparticles Using a New Nondestructive Method. Journal of Physical Chemistry C, 2012, 116, 21326-21333.	3.2	62
117	Enhanced Oxygen Reduction and Methanol Oxidation Reaction Activities of Partially Ordered PtCu Nanoparticles. Energy Procedia, 2012, 29, 208-215.	2.5	25
118	Novel Method for Fast Characterization of High-Surface-Area Electrocatalytic Materials Using a Carbon Fiber Microelectrode. Journal of Physical Chemistry C, 2010, 114, 2640-2644.	3.2	11
119	Kemija na elektriÄni pogon (in obratno). Alternator, 0, , .	0.0	0
120	Reduced graphene oxide as efficient carbon support for Pd-based ethanol oxidation catalysts in alkaline media. Journal of Electrochemical Science and Engineering, 0, , .	5.7	0