Constantinos G Vayenas

List of Publications by Year
in descending order

76 papers	3,224 citations	126907 33 h-index	149698 56 g-index
78 all docs	78 docs citations	78 times ranked	1280 citing authors

#	Article	IF	Citations
1	Non-faradaic electrochemical modification of catalytic activity: A status report. Catalysis Today, 1992, 11, 303-438.	4.4	336
2	Non-faradaic electrochemical modification of catalytic activity 1. The case of ethylene oxidation on Pt. Journal of Catalysis, 1989, 118, 125-146.	6.2	197
3	Electrochemical Promotion and Metalâ€"Support Interactions. Journal of Catalysis, 2001, 204, 23-34.	6.2	144
4	Electrochemical enhancement of a catalytic reaction in aqueous solution. Nature, 1994, 370, 45-47.	27.8	134
5	Rules and Mathematical Modeling of Electrochemical and Chemical Promotion. Journal of Catalysis, 2001, 203, 329-350.	6.2	124
6	In Situ controlled promotion of catalyst surfaces via NEMCA: The effect of Na on the Pt-catalyzed CO oxidation. Journal of Catalysis, 1994, 146, 292-305.	6.2	121
7	The double-layer approach to promotion, electrocatalysis, electrochemical promotion, and metalâ€"support interactions. Journal of Catalysis, 2003, 216, 487-504.	6.2	95
8	Rules of chemical promotion. Applied Catalysis B: Environmental, 2006, 68, 109-124.	20.2	94
9	Non-faradaic electrochemical modification of catalytic activity 4. The use of $beta;$Prime;-Al2O3 as the solid electrolyte. Journal of Catalysis, 1991, 128, 415-435.	6.2	91
10	The effect of membrane thickness on the conductivity of Nafion. Electrochimica Acta, 2006, 51, 2743-2755.	5.2	89
11	Atomic resolution STM imaging of electrochemically controlled reversible promoter dosing of catalysts. Surface Science, 1996, 369, 351-359.	1.9	86
12	Quantum-Chemical Study of Electrochemical Promotion in Catalysis. The Journal of Physical Chemistry, 1996, 100, 16653-16661.	2.9	76
13	Work function measurements on catalyst films subject to in situ electrochemical promotion. Surface Science, 1991, 251-252, 1062-1068.	1.9	75
14	Non-Faradaic Electrochemical Modification of Catalytic Activity. Journal of Catalysis, 1996, 159, 189-203.	6.2	75
15	Support-induced promotional effects on the activity of automotive exhaust catalysts1. The case of oxidation of light hydrocarbons (C2H4). Applied Catalysis B: Environmental, 1997, 14, 161-173.	20.2	75
16	Comparative isotope-aided investigation of electrochemical promotion and metalâ€"support interactions 1. 18O2 TPD of electropromoted Pt films deposited on YSZ and of dispersed Pt/YSZ catalysts. Journal of Catalysis, 2004, 222, 192-206.	6.2	70
17	Non-Faradaic Electrochemical Modification of Catalytic Activity. Journal of Catalysis, 1993, 140, 53-70.	6.2	69
18	Electrochemical promotion (NEMCA) of CH4 and C2H4 oxidation on Pd/YSZ and investigation of the origin of NEMCA via AC impedance spectroscopy. Solid State Ionics, 2000, 136-137, 863-872.	2.7	68

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19	Novel monolithic electrochemically promoted catalytic reactor for environmentally important reactions. Applied Catalysis B: Environmental, 2004, 52, 181-196.	20.2	65
20	Solid electrolyte cyclic voltammetry for in situ investigation of catalyst surfaces. Journal of Catalysis, 1991, 129, 67-87.	6.2	63
21	Fuel cells are a commercially viable alternative for the production of â€œcleanâ€•energy. Ambio, 2016, 45, 32-37.	5.5	55
22	Electrochemical promotion of the CO2 hydrogenation reaction using thin Rh, Pt and Cu films in a monolithic reactor at atmospheric pressure. Catalysis Today, 2009, 146, 336-344.	4.4	51
23	Electrochemical Promotion of a Dispersed Platinum Catalyst. Journal of Catalysis, 1998, 178, 429-440.	6.2	50
24	Temperature-Programmed Desorption of Oxygen from Pt Films Interfaced with Y2O3-Doped ZrO2. Journal of Catalysis, 1998, 178, 414-428.	6.2	47
25	In SituControlled Promotion of Catalyst Surfaces via NEMCA: The Effect of Na on the Pt-Catalyzed NO Reduction by H2. Journal of Catalysis, 1997, 166, 218-228.	6.2	45
26	Comparative isotope-aided investigation of electrochemical promotion and metal?support interactions2. CO oxidation by 18O2 on electropromoted Pt films deposited on YSZ and on nanodispersed Pt/YSZ catalysts. Journal of Catalysis, 2004, 226, 197-209.	6.2	45
27	Electrochemical promotion of the hydrogenation of CO 2 on Ru deposited on a BZY proton conductor. Journal of Catalysis, 2015, 331, 98-109.	6.2	44
28	On the work function of the gas-exposed electrode surfaces in solid state electrolyte cells. Surface Science, 2000, 467, 23-34.	1.9	39
29	Electrochemical promotion of the CO2 hydrogenation on Pd/YSZ and Pd/Î²â€³-Al2O3 catalyst-electrodes. Solid State Ionics, 2008, 179, 1391-1395.	2.7	38
30	Comparative study of the electrochemical promotion of CO2 hydrogenation on Ru using Na+, K+, H+ and O2âˆ' conducting solid electrolytes. Surface Science, 2016, 646, 194-203.	1.9	38
31	The role of potential-dependent electrolyte resistance in the performance, steady-state multiplicities and oscillations of PEM fuel cells: Experimental investigation and macroscopic modelling. Electrochimica Acta, 2005, 50, 5132-5143.	5.2	34
32	The role of Nafion content in sputtered IrO2 based anodes for low temperature PEM water electrolysis. Journal of Electroanalytical Chemistry, 2011, 662, 116-122.	3.8	34
33	Electrochemical promotion of Ru nanoparticles deposited on a proton conductor electrolyte during CO2 hydrogenation. Applied Catalysis B: Environmental, 2020, 276, 119148.	20.2	34
34	On the work function of the gas exposed electrode surfaces in solid state electrochemistry. Journal of Electroanalytical Chemistry, 2000, 486, 85-90.	3.8	31
35	Proton tunneling-induced bistability, oscillations and enhanced performance of PEM fuel cells. Applied Catalysis B: Environmental, 2005, 56, 251-258.	20.2	29
36	Electrochemical promotion of nanodispersed Ru-Co catalysts for the hydrogenation of CO2. Applied Catalysis B: Environmental, 2018, 232, 60-68.	20.2	27

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37	Electrochemical promotion of Pt(111)/YSZ(111) and Ptâ€“FeOx/YSZ(111) thin catalyst films: Electrocatalytic, catalytic and morphological studies. Applied Catalysis B: Environmental, 2010, 100, 328-337.	20.2	24
38	Tuning the RWGS Reaction via EPOC and In Situ Electro-oxidation of Cobalt Nanoparticles. ACS Catalysis, 2020, 10, 14916-14927.	11.2	24
39	Direct STM, XPS and TPD observation of spillover phenomena over mm distances on metal catalyst films interfaced with solid electrolytes. Studies in Surface Science and Catalysis, 1997, 112, 39-47.	1.5	23
40	Electrochemical promotion of an oxidation reaction using a proton conductor. Electrochimica Acta, 2003, 48, 3779-3788.	5.2	23
41	Electrochemical promotion in a monolith electrochemical plate reactor applied to simulated and real automotive pollution control. Topics in Catalysis, 2007, 44, 481-486.	2.8	21
42	Comparative Study of the Electrochemical Promotion of CO₂ Hydrogenation over Ruâ€Supported Catalysts using Electronegative and Electropositive Promoters. ChemElectroChem, 2014, 1, 254-262.	3.4	21
43	Electrochemical promotion of CO 2 hydrogenation on Ru catalystâ€“electrodes supported on a Kâ€“Î²â€³â€“Al 2 O 3 solid electrolyte. Electrochimica Acta, 2015, 179, 556-564.	5.2	21
44	First principles analytical prediction of the conductivity of Nafion membranes. Electrochimica Acta, 2007, 52, 2244-2256.	5.2	20
45	Electrochemical promotion of methane oxidation over nanodispersed Pd/Co3O4 catalysts. Catalysis Today, 2020, 355, 910-920.	4.4	20
46	Electrochemical promotion of methane oxidation on Pd catalyst-electrodes deposited on Y2O3-stabilized-ZrO2. Applied Catalysis B: Environmental, 2012, 128, 48-54.	20.2	19
47	Electrochemical impedance spectroscopy of fully hydrated Nafion membranes at high and low hydrogen partial pressures. Electrochimica Acta, 2011, 56, 10582-10592.	5.2	17
48	A Bohr-type model of a composite particle using gravity as the attractive force. Physica A: Statistical Mechanics and Its Applications, 2014, 405, 360-379.	2.6	17
49	Thermodynamic analysis of the electrochemical promotion of catalysis. Solid State Ionics, 2004, 168, 321-326.	2.7	16
50	Gravity, Special Relativity, and the Strong Force. , 2012, , .		16
51	Methane oxidation on Pd/YSZ by electrochemical promotion. Solid State Ionics, 2012, 225, 376-381.	2.7	14
52	On the structure, masses and thermodynamics of the W<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si27.gif" display="inline" overflow="scroll"><mml:msup><mml:mrow /><mml:mrow><mml:mo>Â±</mml:mo></mml:mrow></mml:msup></mml:math>bosons. Physica A: Statistical Mechanics and Its Applications, 2016, 450, 37-48.	2.6	14
53	Electrochemical promotion of CO2 hydrogenation in a monolithic electrochemically promoted reactor (MEPR). Applied Catalysis B: Environmental, 2021, 284, 119695.	20.2	14
54	Potential-dependent electrolyte resistance and steady-state multiplicities of PEM fuel cells. Solid State Ionics, 2006, 177, 2397-2401.	2.7	10

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55	Note on â€œElectrochemical promotion of catalytic reactionsâ€ Progress in Surface Science, 2011, 86, 83-93.	8.3	10
56	Note on â€œThe Electrochemical Promotion of Ethylene Oxidation at a Pt/YSZ Catalystâ€ ChemPhysChem, 2011, 12, 1761-1763.	2.1	9
57	On the structure, mass and thermodynamics of the Z<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si9.gif" display="inline" overflow="scroll"><mml:msup><mml:mrow /><mml:mrow><mml:mi>o</mml:mi></mml:mrow></mml:msup></mml:math> bosons. Physica A: Statistical Mechanics and Its Applications, 2016, 464, 231-240.	2.6	9
58	Catalysis and autocatalysis of chemical synthesis and of hadronization. Applied Catalysis B: Environmental, 2017, 203, 582-590.	20.2	9
59	The role of the promoting ionic species in electrochemical promotion and in metal-support interactions. Catalysis Today, 2021, 363, 122-127.	4.4	9
60	Kinetic study of CO2 hydrogenation on Ru/ YSZ catalyst using a monolithic electropromoted reactor (MEPR). Chemical Engineering Journal, 2022, 430, 132967.	12.7	9
61	On the mass and thermodynamics of the Higgs boson. Physica A: Statistical Mechanics and Its Applications, 2018, 492, 737-746.	2.6	8
62	Electrochemical promotion of methane oxidation on Pd nanoparticles deposited on YSZ. Materials Today: Proceedings, 2018, 5, 27345-27352.	1.8	6
63	Non-Faradaic Electrochemical Promotion of BrÃ¸nsted Acid-Catalyzed Dehydration Reactions over Molybdenum Oxide. ACS Catalysis, 2022, 12, 906-912.	11.2	6
64	In Situ Controlled Promotion of Catalyst Surfaces Via Solid Electrolytes: The NEMCA Effect. Zeitschrift Fur Elektrotechnik Und Elektrochemie, 1995, 99, 1393-1401.	0.9	5
65	Computation of the masses, energies and internal pressures of hadrons, mesons and bosons via the Rotating Lepton Model. Physica A: Statistical Mechanics and Its Applications, 2020, 545, 123679.	2.6	5
66	Hadronization via gravitational confinement of fast neutrinos: Mechanics at fm distances. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2022, 102, .	1.6	3
67	Non-Faradaic Electrochemical Modification of Catalytic Activity: Partial Oxidation of C2H4 On Ag And CH3OH On Pt. Studies in Surface Science and Catalysis, 1990, , 643-652.	1.5	2
68	Gravitational mass and Newton's universal gravitational law under relativistic conditions. Journal of Physics: Conference Series, 2015, 633, 012033.	0.4	2
69	Microscopic black hole stabilization via the uncertainty principle. Journal of Physics: Conference Series, 2015, 574, 012059.	0.4	2
70	Computation of masses and binding energies of some hadrons and bosons according to the rotating lepton model and the relativistic Newton equation. Journal of Physics: Conference Series, 2016, 738, 012080.	0.4	2
71	Proton internal pressure distribution suggests a simple proton structure. Journal of the Mechanical Behavior of Materials, 2019, 28, 1-7.	1.8	2
72	Steady State Multiplicities in Low Temperature PEM Fuel Cells. Materials Today: Proceedings, 2018, 5, 27397-27405.	1.8	1

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73	Gravitationally confined relativistic neutrinos. Journal of Physics: Conference Series, 2017, 888, 012174.	0.4	0
74	Hadronization via gravitational confinement. Journal of Physics: Conference Series, 2017, 936, 012078.	0.4	0
75	Electrochemical Promotion for the Abatement of Gaseous Pollutants. , 2014, , 548-554.		0
76	Speeds of Wave Propagation in Ideal Gaseous Molecular and Neutrino Media. Journal of Physical Chemistry B, 0, , .	2.6	0