PaweÅ, Stelmachowski

List of Publications by Year
in descending order

90 papers	3,413 citations	101543 36 h-index	161849 54 g-index
92 all docs	92 docs citations	92 times ranked	3176 citing authors

#	Article	IF	Citations
1	Kinetics of Oxygen Electroreduction on Meâ€“Nâ€“C (Me = Fe, Co, Cu) Catalysts in Acidic Medium: Insights on the Effect of the Transition Metal. Journal of Physical Chemistry C, 2017, 121, 17796-17817.	3.1	128
2	Strong electronic promotion of Co3O4 towards N2O decomposition by surface alkali dopants. Catalysis Communications, 2009, 10, 1062-1065.	3.3	125
3	Optimization of Pd catalysts supported on Co3O4 for low-temperature lean combustion of residual methane. Applied Catalysis B: Environmental, 2017, 206, 712-725.	20.2	107
4	Strong dispersion effect of cobalt spinel active phase spread over ceria for catalytic N2O decomposition: The role of the interface periphery. Applied Catalysis B: Environmental, 2016, 180, 622-629.	20.2	101
5	Mg and Al substituted cobalt spinels as catalysts for low temperature deN2Oâ€”Evidence for octahedral cobalt active sites. Applied Catalysis B: Environmental, 2014, 146, 105-111.	20.2	99
6	Syngas production by methane oxy-steam reforming on Me/CeO2 (Me = Rh, Pt, Ni) catalyst lined on cordierite monoliths. Applied Catalysis B: Environmental, 2015, 162, 551-563.	20.2	93
7	Decomposition of N2O over the surface of cobalt spinel: A DFT account of reactivity experiments. Catalysis Today, 2008, 137, 418-422.	4.4	92
8	Surface chemistry and reactivity of ceriaâ€“zirconia-supported palladium oxide catalysts for natural gas combustion. Journal of Catalysis, 2009, 263, 134-145.	6.2	86
9	Potassium Promotion of Cobalt Spinel Catalyst for N2O Decompositionâ€”Accounted by Work Function Measurements and DFT Modelling. Catalysis Letters, 2009, 127, 126-131.	2.6	83
10	Influence of the surface potassium species in Feâ€“K/Al2O3 catalysts on the soot oxidation activity in the presence of NOx. Applied Catalysis B: Environmental, 2014, 152-153, 88-98.	20.2	82
11	Rationales for the selection of the best precursor for potassium doping of cobalt spinel based deN2O catalyst. Applied Catalysis B: Environmental, 2013, 136-137, 302-307.	20.2	78
12	Activity of Coâ€“N multi walled carbon nanotubes electrocatalysts for oxygen reduction reaction in acid conditions. Journal of Power Sources, 2015, 278, 296-307.	7.8	73
13	Periodic DFT and HR-STEM Studies of Surface Structure and Morphology of Cobalt Spinel Nanocrystals. Retrieving 3D Shapes from 2D Images. Journal of Physical Chemistry C, 2011, 115, 6423-6432.	3.1	70
14	Innovative carbon-free low content Pt catalyst supported on Mo-doped titanium suboxide (Ti3O5-Mo) for stable and durable oxygen reduction reaction. Applied Catalysis B: Environmental, 2017, 201, 419-429.	20.2	66
15	Comparative Study on Steam and Oxidative Steam Reforming of Methane with Noble Metal Catalysts. Industrial & Engineering Chemistry Research, 2013, 52, 15428-15436.	3.7	65
16	Soot oxidation over K-doped manganese and iron spinels â€” How potassium precursor nature and doping level change the catalyst activity. Catalysis Communications, 2014, 43, 34-37.	3.3	65
17	In situ combustion synthesis of perovskite catalysts for efficient and clean methane premixed metal burners. Chemical Engineering Science, 2004, 59, 5091-5098.	3.8	59
18	Kinetic Studies on Pd/CexZr1â^'xO2Catalyst for Methane Combustion. Industrial & Engineering Chemistry Research, 2010, 49, 11101-11111.	3.7	56

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19	Solution Combustion Synthesis as intriguing technique to quickly produce performing catalysts for specific applications. Studies in Surface Science and Catalysis, 2010, 175, 59-67.	1.5	56
20	Pd/Co3O4-based catalysts prepared by solution combustion synthesis for residual methane oxidation in lean conditions. Catalysis Today, 2015, 257, 66-71.	4.4	53
21	Insights into the twofold role of Cs doping on deN 2 O activity of cobalt spinel catalystâ€"towards rational optimization of the precursor and loading. Applied Catalysis B: Environmental, 2015, 168-169, 509-514.	20.2	51
22	Guidelines for optimization of catalytic activity of 3d transition metal oxide catalysts in N2O decomposition by potassium promotion. Catalysis Today, 2011, 176, 369-372.	4.4	50
23	Catalytic properties in N2O decomposition of mixed cobaltâ€"iron spinels. Catalysis Communications, 2011, 15, 127-131.	3.3	45
24	Demonstration of the Influence of Specific Surface Area on Reaction Rate in Heterogeneous Catalysis. Journal of Chemical Education, 2021, 98, 935-940.	2.3	43
25	Role of Electronic Factor in Soot Oxidation Process Over Tunnelled and Layered Potassium Iron Oxide Catalysts. Topics in Catalysis, 2013, 56, 489-492.	2.8	42
26	Boosting the catalytic activity of magnetite in soot oxidation by surface alkali promotion. Catalysis Communications, 2014, 56, 139-142.	3.3	42
27	Surface versus bulk alkali promotion of cobalt-oxide catalyst in soot oxidation. Catalysis Communications, 2015, 71, 37-41.	3.3	42
28	Analysis of Ru/La-Al2O3 catalyst loading on alumina monoliths and controlling regimes in methane steam reforming. Chemical Engineering Journal, 2018, 334, 1792-1807.	12.7	42
29	Computational and Experimental Investigations into N₂O Decomposition over MgO Nanocrystals from Thorough Molecular Mechanism to ab initio Microkinetics. Journal of Physical Chemistry C, 2011, 115, 22451-22460.	3.1	41
30	Cobalt Spinel Catalyst for N₂O Abatement in the Pilot Plant Operationâ€"Long-Term Activity and Stability in Tail Gases. Industrial & Engineering Chemistry Research, 2014, 53, 10335-10342.	3.7	41
31	Syngas production by steam and oxy-steam reforming of biogas on monolith-supported CeO2-based catalysts. International Journal of Hydrogen Energy, 2018, 43, 11731-11744.	7.1	41
32	Catalytically modified fly-ash filters for NOx reduction with NH3. Chemical Engineering Science, 1996, 51, 5289-5297.	3.8	39
33	Optimal Microstructural Design of a Catalytic Premixed FeCrAlloy Fiber Burner for Methane Combustion. Industrial & Engineering Chemistry Research, 2004, 43, 1990-1998.	3.7	39
34	Methane oxy-steam reforming reaction: Performances of Ru/Î³-Al2O3 catalysts loaded on structured cordierite monoliths. International Journal of Hydrogen Energy, 2014, 39, 18592-18603.	7.1	38
35	Catalytic combustion of residual methane on alumina monoliths and open cell foams coated with Pd/Co3O4. Chemical Engineering Journal, 2017, 326, 339-349.	12.7	37
36	Strong Enhancement of deSoot Activity of Transition Metal Oxides by Alkali Doping: Additive Effects of Potassium and Nitric Oxide. Topics in Catalysis, 2017, 60, 162-170.	2.8	37

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37	Examination of acidâ€“base properties of solid catalysts for gas phase dehydration of glycerol: FTIR and adsorption microcalorimetry studies. Catalysis Today, 2014, 226, 167-175.	4.4	36
38	Catalytic Performance of Pd/Co₃O₄ on SiC and ZrO₂ Open Cell Foams for Process Intensification of Methane Combustion in Lean Conditions. Industrial & Engineering Chemistry Research, 2017, 56, 6625-6636.	3.7	36
39	Benchmark comparison of Co3O4 spinel-structured oxides with different morphologies for oxygen evolution reaction under alkaline conditions. Journal of Applied Electrochemistry, 2017, 47, 295-304.	2.9	36
40	Oxygen evolution catalysis in alkaline conditions over hard templated nickel-cobalt based spinel oxides. International Journal of Hydrogen Energy, 2017, 42, 27910-27918.	7.1	36
41	New insights into the role of active copper species in CuO/Cryptomelane catalysts for the CO-PROX reaction. Applied Catalysis B: Environmental, 2020, 267, 118372.	20.2	35
42	Optimization of Multicomponent Cobalt Spinel Catalyst for N2O Abatement from Nitric Acid Plant Tail Gases: Laboratory and Pilot Plant Studies. Catalysis Letters, 2009, 130, 637-641.	2.6	34
43	CO Methanation Over Ruâ€“Al2O3 Catalysts: Effects of Chloride Doping on Reaction Activity and Selectivity. Topics in Catalysis, 2011, 54, 1042-1053.	2.8	34
44	Mapping transition metalâ€“nitrogenâ€“carbon catalystÂperformance on the critical descriptorÂdiagram. Current Opinion in Electrochemistry, 2021, 27, 100687.	4.8	34
45	Experimental and DFT studies of N2O decomposition over bare and Co-doped magnesium oxideâ€”insights into the role of active sites topology in dry and wet conditions. Catalysis Today, 2008, 137, 423-428.	4.4	33
46	DFT Modeling of Reaction Mechanism and Ab Initio Microkinetics of Catalytic N₂O Decomposition over Alkaline Earth Oxides: From Molecular Orbital Picture Account to Simulation of Transient and Stationary Rate Profiles. Journal of Physical Chemistry C, 2013, 117, 18488-18501.	3.1	33
47	Engineered biochar derived from pyrolyzed waste tea as a carbon support for Fe-N-C electrocatalysts for the oxygen reduction reaction. Electrochimica Acta, 2022, 412, 140128.	5.2	33
48	How to Efficiently Promote Transition Metal Oxides by Alkali Towards Catalytic Soot Oxidation. Topics in Catalysis, 2016, 59, 1083-1089.	2.8	31
49	Insights into the effect of catalyst loading on methane steam reforming and controlling regime for metallic catalytic monoliths. International Journal of Hydrogen Energy, 2018, 43, 11778-11792.	7.1	31
50	Palladium/perovskite/zirconia catalytic premixed fiber burners for efficient and clean natural gas combustion. Catalysis Today, 2006, 117, 427-432.	4.4	29
51	Influence of preparation method on dispersion of cobalt spinel over alumina extrudates and the catalyst deN 2 O activity. Applied Catalysis B: Environmental, 2017, 210, 34-44.	20.2	29
52	Cobaltâ€“zinc spinel dispersed over cordierite monoliths for catalytic N2O abatement from nitric acid plants. Catalysis Today, 2015, 257, 93-97.	4.4	28
53	Laboratory and pilot scale synthesis, characterization and reactivity of multicomponent cobalt spinel catalyst for low temperature removal of N2O from nitric acid plant tail gases. Catalysis Today, 2011, 176, 365-368.	4.4	26
54	Influence of Potassium and NO Addition on Catalytic Activity in Soot Combustion and Surface Properties of Iron and Manganese Spinels. Topics in Catalysis, 2013, 56, 745-749.	2.8	26

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55	The role of crystallite size of iron oxide catalyst for soot combustion. Catalysis Today, 2015, 257, 111-116.	4.4	26
56	Bulk, Surface and Interface Promotion of Co3O4 for the Low-Temperature N2O Decomposition Catalysis. Catalysts, 2020, 10, 41.	3.5	26
57	Morphology-dependent reactivity of cobalt oxide nanoparticles in N2O decomposition. Catalysis Science and Technology, 2016, 6, 5554-5560.	4.1	25
58	Robust Co3O4 | Î±-Al2O3 | cordierite structured catalyst for N2O abatement â€“ Validation of the SCS method for active phase synthesis and deposition. Chemical Engineering Journal, 2019, 377, 120088.	12.7	23
59	Carbon-Based Composites as Electrocatalysts for Oxygen Evolution Reaction in Alkaline Media. Materials, 2021, 14, 4984.	2.9	23
60	Facile synthesis of ordered CeO 2 nanorod assemblies: Morphology and reactivity. Materials Chemistry and Physics, 2017, 201, 139-146.	4.0	21
61	The Effect of Fe, Co, and Ni Structural Promotion of Cryptomelane (KMn8O16) on the Catalytic Activity in Oxygen Evolution Reaction. Electrocatalysis, 2018, 9, 762-769.	3.0	21
62	Alumina-supported nickel catalysts for catalytic partial oxidation of methane in short-contact time reactors. Catalysis Today, 2011, 176, 340-346.	4.4	20
63	Facing the catalytic combustion of CH4/H2 mixtures into monoliths. Chemical Engineering Journal, 2011, 167, 622-633.	12.7	20
64	Speciation of adsorbed CO2 on metal oxides by a new 2-dimensional approach: 2D infrared inversion spectroscopy (2D IRIS). Physical Chemistry Chemical Physics, 2013, 15, 9335.	2.8	20
65	Rh/CeO2 Thin Catalytic Layer Deposition on Alumina Foams: Catalytic Performance and Controlling Regimes in Biogas Reforming Processes. Catalysts, 2018, 8, 448.	3.5	20
66	Reactivity of Mixed Ironâ€“Cobalt Spinels in the Lean Methane Combustion. Topics in Catalysis, 2017, 60, 1370-1379.	2.8	19
67	Surface chemistry and reactivity of Pd/BaCeO3â˜™2ZrO2 catalyst upon sulphur hydrothermal treatment for the total oxidation of methane. Applied Catalysis A: General, 2015, 505, 183-192.	4.3	18
68	The Effect of the Preparation Method of Pd-Doped Cobalt Spinel on the Catalytic Activity in Methane Oxidation Under Lean Fuel Conditions. Topics in Catalysis, 2017, 60, 333-341.	2.8	18
69	Analysis of heat and mass transfer limitations for the combustion of methane emissions on PdO/Co3O4 coated on ceramic open cell foams. Chemical Engineering Journal, 2021, 405, 126970.	12.7	18
70	Thermal oxygen activation followed by in situ work function measurements over carbon-supported noble metal-based catalysts. International Journal of Hydrogen Energy, 2019, 44, 16648-16656.	7.1	17
71	Catalytic combustion of CH4 and H2 into micro-monoliths. Catalysis Today, 2010, 157, 440-445.	4.4	16
72	Production of ultra-dense hydrogen H(0): A novel nuclear fuel. International Journal of Hydrogen Energy, 2021, 46, 18466-18480.	7.1	16

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73	Emission of highly excited electronic states of potassium from cryptomelane nanorods. Physical Chemistry Chemical Physics, 2015, 17, 26289-26294.	2.8	15
74	Experimental Insights into the Coupling of Methane Combustion and Steam Reforming in a Catalytic Plate Reactor in Transient Mode. Industrial & Engineering Chemistry Research, 2021, 60, 196-209.	3.7	15
75	Influence of the preparation method on Pt3Cu/C electrocatalysts for the oxygen reduction reaction. Electrochimica Acta, 2015, 177, 51-56.	5.2	14
76	Role of chain length of the capping agents of iron oxide based fuel borne catalysts in the enhancement of soot combustion activity. Applied Catalysis B: Environmental, 2016, 199, 485-493.	20.2	13
77	Density Functional Theory Modeling and Time-of-Flight Secondary Ion Mass Spectrometric and X-ray Photoelectron Spectroscopic Investigations into Mechanistic Key Events of Coronene Oxidation: Toward Molecular Understanding of Soot Combustion. Journal of Physical Chemistry C, 2015, 119, 6568-6580.	3.1	11
78	Ageing mechanisms on PdOx-based catalysts for natural gas combustion in premixed burners. Chemical Engineering Science, 2010, 65, 186-192.	3.8	10
79	Phase evolution and electronic properties of cryptomelane nanorods. Journal of Alloys and Compounds, 2018, 767, 592-599.	5.5	10
80	Ammonia selective sensors based on cobalt spinel prepared by combustion synthesis. Solid State Ionics, 2019, 337, 91-100.	2.7	10
81	Combined silicon carbide and zirconia open cell foams for the process intensification of catalytic methane combustion in lean conditions: Impact on heat and mass transfer. Chemical Engineering Journal, 2022, 429, 132448.	12.7	10
82	Magnesium Effect in K/Co-Mg-Mn-Al Mixed Oxide Catalyst for Direct NO Decomposition. Catalysts, 2020, 10, 931.	3.5	9
83	Effect of the Co3O4 load on the performance of PdO/Co3O4/ZrO2 open cell foam catalysts for the lean combustion of methane: Kinetic and mass transfer regimes. Catalysis Today, 2022, 383, 247-258.	4.4	9
84	Combustion of CH4/H2/Air Mixtures in Catalytic Microreactors. ChemPhysChem, 2009, 10, 783-786.	2.1	7
85	Insights into Structure, Morphology and Reactivity of the Iron Oxide Based Fuel Borne Catalysts. Topics in Catalysis, 2017, 60, 367-373.	2.8	3
86	Oxidation of soot over supported RuRe nanoparticles prepared by the microwave-polyol method. Reaction Kinetics, Mechanisms and Catalysis, 2021, 134, 221-242.	1.7	3
87	The modifications of copper work function by layer-by-layer deposition of [W(CN)8]4â^' â€“ Co2+ bimetallic nanolayers. Polyhedron, 2009, 28, 473-478.	2.2	2
88	Influence of Different Birnessite Interlayer Alkali Cations on Catalytic Oxidation of Soot and Light Hydrocarbons. Catalysts, 2020, 10, 507.	3.5	2
89	Performance and Controlling Regimes Analysis of Methane Steam Reforming on Ru/Î³-Al2O3 Cordierite Monoliths. Green Energy and Technology, 2021, , 91-131.	0.6	2
90	TiO2 Supported RuRe Nanocatalysts for Soot Oxidation: Effect of Re and the Support Nature. Catalysis Letters, 0, , .	2.6	0