John Mantzaras

List of Publications by Year
in descending order

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93	4,108	87888	123424
papers	citations	38 h-index	61 g-index

96	96	96	1706
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	High-pressure catalytic combustion of methane over platinum: In situ experiments and detailed numerical predictions. Combustion and Flame, 2004, 136, 217-240.	5.2	388
2	Turbulent catalytically stabilized combustion of hydrogen/air mixtures in entry channel flows. Combustion and Flame, 2005, 140, 70-92.	5.2	305
3	Dynamics of premixed hydrogen/air flames in microchannels. Combustion and Flame, 2008, 152, 433-450.	5.2	187
4	An experimental and numerical investigation of homogeneous ignition in catalytically stabilized combustion of hydrogen/air mixtures over platinum. Combustion and Flame, 2002, 128, 340-368.	5.2	148
5	Hetero-/homogeneous combustion and stability maps in methane-fueled catalytic microreactors. Proceedings of the Combustion Institute, 2007, 31, 3309-3317.	3.9	132
6	Saturation Dependent Effective Transport Properties of PEFC Gas Diffusion Layers. Journal of the Electrochemical Society, 2012, 159, F536-F544.	2.9	113
7	Dynamics of premixed hydrogen/air flames in mesoscale channels. Combustion and Flame, 2008, 155, 2-20.	5.2	109
8	Gas phase chemistry in catalytic combustion of methane/air mixtures over platinum at pressures of 1 to 16 bar. Combustion and Flame, 2005, 141, 448-468.	5.2	105
9	Two-dimensional modelling for catalytically stabilized combustion of a lean methane-air mixture with elementary homogeneous and heterogeneous chemical reactions. Combustion and Flame, 1999, 116, 243-258.	5.2	104
10	Suppression of combustion instabilities of premixed hydrogen/air flames in microchannels using heterogeneous reactions. Proceedings of the Combustion Institute, 2009, 32, 3051-3058.	3.9	99
11	Dynamics of premixed flames in a narrow channel with a step-wise wall temperature. Combustion and Flame, 2009, 156, 2190-2200.	5.2	90
12	Catalytic Combustion of Syngas. Combustion Science and Technology, 2008, 180, 1137-1168.	2.3	89
13	High-pressure experiments and modeling of methane/air catalytic combustion for power-generation applications. Catalysis Today, 2003, 83, 157-170.	4.4	82
14	Homogeneous ignition of methane-air mixtures over platinum: Comparison of measurements and detailed numerical predictions. Proceedings of the Combustion Institute, 1998, 27, 2275-2282.	0.3	72
15	altimg="si157.gif" display="inline" overflow="scroll" xmlns:xocs="http://www.elsevier.com/xml/xocs/dtd" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.elsevier.com/xml/ja/dtd" xmlns:ja="http://www.elsevier.com/xml/ja/dtd" xmlns:mml="http://www.w3.org/1998/Math/MathML"	3.8	68
16	Stability of hetero-/homogeneous combustion in propane- and methane-fueled catalytic microreactors: Channel confinement and molecular transport effects. Proceedings of the Combustion Institute, 2011, 33, 3241-3249.	3.9	66
17	Effects of finite rate heterogeneous kinetics on homogeneous ignition in catalytically stabilized channel flow combustion. Combustion and Flame, 2002, 130, 336-351.	5.2	58
18	Homogeneous combustion of fuel-lean H2/O2/N2 mixtures over platinum at elevated pressures and preheats. Combustion and Flame, 2011, 158, 1491-1506.	5.2	57

#	Article	IF	Citations
19	Hetero-/homogeneous combustion of hydrogen/air mixtures over platinum at pressures up to 10 bar. Proceedings of the Combustion Institute, 2009, 32, 1937-1945.	3.9	56
20	Numerical investigation on the start-up of methane-fueled catalytic microreactors. Combustion and Flame, 2010, 157, 1400-1413.	5.2	55
21	Experimental and numerical investigation of the hetero-/homogeneous combustion of lean propane/air mixtures over platinum. Proceedings of the Combustion Institute, 2009, 32, 1947-1955.	3.9	54
22	Homogeneous ignition in high-pressure combustion of methane/air over platinum: Comparison of measurements and detailed numerical predictions. Proceedings of the Combustion Institute, 2002, 29, 1021-1029.	3.9	50
23	Partial catalytic oxidation of methane to synthesis gas over rhodium: in situ Raman experiments and detailed simulations. Proceedings of the Combustion Institute, 2005, 30, 2509-2517.	3.9	49
24	Laser induced fluorescence of formaldehyde and Raman measurements of major species during partial catalytic oxidation of methane with large H2O and CO2 dilution at pressures up to 10bar. Proceedings of the Combustion Institute, 2007, 31, 1973-1981.	3.9	49
25	An asymptotic and numerical investigation of homogeneous ignition in catalytically stabilized channel flow combustion. Combustion and Flame, 1999, 119, 455-472.	5.2	47
26	Flame dynamics in catalytic and non-catalytic mesoscale microreactors. Catalysis Today, 2010, 155, 123-130.	4.4	47
27	Kinetic interactions between hydrogen and carbon monoxide oxidation over platinum. Combustion and Flame, 2014, 161, 332-346.	5.2	47
28	Progress in non-intrusive laser-based measurements of gas-phase thermoscalars and supporting modeling near catalytic interfaces. Progress in Energy and Combustion Science, 2019, 70, 169-211.	31.2	47
29	An experimental and numerical investigation of the combustion and heat transfer characteristics of hydrogen-fueled catalytic microreactors. Chemical Engineering Science, 2016, 141, 214-230.	3.8	45
30	An experimental and numerical investigation of turbulent catalytically stabilized channel flow combustion of hydrogen/air mixtures over platinum. Proceedings of the Combustion Institute, 2002, 29, 1031-1038.	3.9	44
31	Ignition and Extinction in Catalytic Partial Oxidation of Methane-Oxygen Mixtures with Large H₂O and CO₂Dilution. Combustion Science and Technology, 2007, 180, 89-126.	2.3	44
32	Catalytic combustion of methane/air mixtures over platinum: Homogeneous ignition distances in channel flow configurations. Proceedings of the Combustion Institute, 2000, 28, 1349-1357.	3.9	43
33	Homogeneous ignition of CH4/air and H2O and CO2-diluted CH4/O2 mixtures over Pt; an experimental and numerical investigation at pressures up to 16bar. Proceedings of the Combustion Institute, 2005, 30, 2519-2527.	3.9	42
34	Experimental and pore-level numerical investigation of water evaporation in gas diffusion layers of polymer electrolyte fuel cells. International Journal of Heat and Mass Transfer, 2017, 115, 238-249.	4.8	42
35	Effects of hydrogen preconversion on the homogeneous ignition of fuel-lean H2/O2/N2/CO2 mixtures over platinum at moderate pressures. Combustion and Flame, 2010, 157, 1942-1958.	5.2	40
36	Combustion stability and hetero-/homogeneous chemistry interactions for fuel-lean hydrogen/air mixtures in platinum-coated microchannels. Combustion and Flame, 2016, 173, 370-386.	5.2	40

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37	Numerical modelling of turbulent catalytically stabilized channel flow combustion. Catalysis Today, 2000, 59, 3-17.	4.4	39
38	Hetero-/homogeneous combustion of hydrogen/air mixtures over platinum: Fuel-lean versus fuel-rich combustion modes. International Journal of Hydrogen Energy, 2013, 38, 10654-10670.	7.1	39
39	Experimental and numerical investigation of supported rhodium catalysts for partial oxidation of methane in exhaust gas diluted reaction mixtures. Chemical Engineering Science, 2007, 62, 3991-4011.	3.8	38
40	Chaotic dynamics in premixed hydrogen/air channel flow combustion. Combustion Theory and Modelling, 2012, 16, 275-299.	1.9	38
41	Homogeneous combustion of fuel-lean syngas mixtures over platinum at elevated pressures and preheats. Combustion and Flame, 2013, 160, 155-169.	5.2	38
42	Experimental and numerical investigation of hetero-/homogeneous combustion of CO/H2/O2/N2 mixtures over platinum at pressures up to 5 bar. Proceedings of the Combustion Institute, 2011, 33, 1827-1835.	3.9	37
43	Electronic structure and oxygen vacancies in PdO and ZnO: validation of DFT models. Physical Chemistry Chemical Physics, 2011, 13, 15947.	2.8	35
44	An experimental and numerical investigation of the hetero-/homogeneous combustion of fuel-rich hydrogen/air mixtures over platinum. Proceedings of the Combustion Institute, 2013, 34, 2269-2277.	3.9	35
45	EFFECTS OF H2O AND CO2DILUTION ON THE CATALYTIC AND GAS-PHASE COMBUSTION OF METHANE OVER PLATINUM AT ELEVATED PRESSURES. Combustion Science and Technology, 2007, 179, 553-600.	2.3	33
46	An experimental and numerical investigation of premixed syngas combustion dynamics in mesoscale channels with controlled wall temperature profiles. Proceedings of the Combustion Institute, 2015, 35, 3429-3437.	3.9	30
47	Thermal multicomponent lattice Boltzmann model for catalytic reactive flows. Physical Review E, 2014, 89, 063310.	2.1	29
48	A comparative experimental and numerical investigation of the heterogeneous and homogeneous combustion characteristics of fuel-rich methane mixtures over rhodium and platinum. Proceedings of the Combustion Institute, 2017, 36, 4313-4320.	3.9	29
49	Detailed transient numerical simulation of H2/air hetero-/homogeneous combustion in platinum-coated channels with conjugate heat transfer. Combustion and Flame, 2014, 161, 2692-2707.	5.2	28
50	An analytical and numerical investigation of hetero-/homogeneous combustion with deficient reactants having larger than unity Lewis numbers. Combustion and Flame, 2014, 161, 1911-1922.	5.2	27
51	Flame dynamics in lean premixed /air combustion in a mesoscale channel. Combustion and Flame, 2014, 161, 1268-1281.	5.2	26
52	Understanding and modeling of thermofluidic processes in catalytic combustion. Catalysis Today, 2006, 117, 394-406.	4.4	25
53	Hetero-/homogeneous combustion of syngas mixtures over platinum at fuel-rich stoichiometries and pressures up to 14 bar. Proceedings of the Combustion Institute, 2015, 35, 2223-2231.	3.9	25
54	Hetero-/homogeneous combustion of ethane/air mixtures over platinum at pressures up to 14 bar. Proceedings of the Combustion Institute, 2013, 34, 2279-2287.	3.9	22

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55	Effects of hydrogen addition on the catalytic oxidation of carbon monoxide over platinum at power generation relevant temperatures. Proceedings of the Combustion Institute, 2013, 34, 3343-3350.	3.9	21
56	H2 and CO heterogeneous kinetic coupling during combustion of H2/CO/O2/N2 mixtures over rhodium. Combustion and Flame, 2019, 202, 292-302.	5.2	21
57	Geometrical Properties of Turbulent Premixed Flames: Comparison Between Computed and Measured Quantities. Combustion Science and Technology, 1992, 86, 135-162.	2.3	19
58	Numerical Investigation on the Hydrogen-Assisted Start-Up of Methane-Fueled, Catalytic Microreactors. Flow, Turbulence and Combustion, 2012, 89, 215-230.	2.6	19
59	CH4 combustion cycles at Pd/Al2O3 â€“ important role of support and oxygen access. Physical Chemistry Chemical Physics, 2013, 15, 11368.	2.8	19
60	Homogeneous ignition during fuel-rich H 2 /O 2 /N 2 combustion in platinum-coated channels at elevated pressures. Combustion and Flame, 2017, 180, 184-195.	5.2	19
61	Hetero-/homogeneous combustion of fuel-lean CH4/O2/N2 mixtures over PdO at elevated pressures. Proceedings of the Combustion Institute, 2019, 37, 5465-5472.	3.9	19
62	DFT studies of oxidation routes for Pd9 clusters supported on Î³-alumina. Physical Chemistry Chemical Physics, 2012, 14, 10243.	2.8	18
63	Transient simulation of the combustion of fuel-lean hydrogen/air mixtures in platinum-coated channels. Combustion Theory and Modelling, 2015, 19, 514-548.	1.9	18
64	A pore-level direct numerical investigation of water evaporation characteristics under air and hydrogen in the gas diffusion layers of polymer electrolyte fuel cells. International Journal of Heat and Mass Transfer, 2019, 129, 1250-1262.	4.8	18
65	Fuel Cell Modeling and Simulations. Chimia, 2004, 58, 857-868.	0.6	17
66	Kinetic interactions between H2 and CO in catalytic oxidation over PdO. Combustion and Flame, 2020, 211, 270-280.	5.2	16
67	Staged Catalytic Combustion Method for the Advanced Zero Emissions Gas Turbine Power Plant. , 2004, , 705.		15
68	Hetero-/homogeneous combustion of fuel-lean methane/oxygen/nitrogen mixtures over rhodium at pressures up to 12 bar. Proceedings of the Combustion Institute, 2017, 36, 4321-4328.	3.9	15
69	Experimental and numerical investigation of a propane-fueled, catalytic mesoscale combustor. Catalysis Today, 2010, 155, 108-115.	4.4	13
70	Lattice Boltzmann model for thermal binary-mixture gas flows. Physical Review E, 2013, 87, 053304.	2.1	13
71	Improvement of Gas Turbine Combustion Reactivity Under Flue Gas Recirculation Condition With In-Situ Hydrogen Addition. , 2009, , .		10
72	Catalytic Combustion of Hydrogen, Challenges, and Opportunities. Advances in Chemical Engineering, 2014, , 97-157.	0.9	10

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73	Three-dimensional direct numerical simulations of turbulent fuel-lean H2/air hetero-/homogeneous combustion over Pt with detailed chemistry. Proceedings of the Combustion Institute, 2017, 36, 4355-4363.	3.9	10
74	Impact of Gaseous Chemistry in H₂â€“O₂â€“N₂ Combustion over Platinum at Fuel-Lean Stoichiometries and Pressures of 1.0â€“3.5 bar. Energy & Fuels, 2017, 31, 11448-11459.	5.1	10
75	Direct numerical simulation of turbulent channel-flow catalytic combustion: Effects of Reynolds number and catalytic reactivity. Combustion and Flame, 2018, 187, 52-66.	5.2	10
76	Heterogeneous and homogeneous combustion of fuel-lean C3H8/O2/N2 mixtures over rhodium at pressures up to 6 bar. Proceedings of the Combustion Institute, 2021, 38, 6473-6482.	3.9	9
77	Study of a Rich/Lean Staged Combustion Concept for Hydrogen at Gas Turbine Relevant Conditions. , 2013, , .		8
78	Direct numerical simulations of turbulent catalytic and gas-phase combustion of H2/air over Pt at practically-relevant Reynolds numbers. Proceedings of the Combustion Institute, 2019, 37, 5489-5497.	3.9	8
79	Homogeneous ignition of H2/CO/O2/N2 mixtures over palladium at pressures up to 8â€¯bar. Proceedings of the Combustion Institute, 2021, 38, 6583-6591.	3.9	8
80	An experimental and numerical investigation of the catalytic-rich/gaseous-lean combustion of H2/CO/air mixtures at 8â€¯bar. Proceedings of the Combustion Institute, 2021, 38, 5443-5451.	3.9	8
81	Coupled reaction mechanism reduction for the hetero-/homogeneous combustion of syngas over platinum. Combustion and Flame, 2020, 214, 37-46.	5.2	7
82	Insights on the interaction of serpentine channels and gas diffusion layer in an operating polymer electrolyte fuel cell: Numerical modeling across scales. International Journal of Heat and Mass Transfer, 2021, 181, 121859.	4.8	7
83	Coherent Anti-Stokes Raman Spectroscopy measurements of temperature fluctuations in turbulent natural gas-fueled piloted jet diffusion flames. Combustion and Flame, 1997, 110, 39-53.	5.2	6
84	New Directions in Advanced Modeling and in Situ Measurements Near Reacting Surfaces. Flow, Turbulence and Combustion, 2013, 90, 681-707.	2.6	5
85	First line shape analysis and spectroscopic parameters for the Î½11 band of 12C2H4. Journal of Quantitative Spectroscopy and Radiative Transfer, 2016, 184, 297-307.	2.3	5
86	Hetero-/homogeneous chemistry interactions and flame formation during methane catalytic partial oxidation in rhodium-coated channels. Combustion and Flame, 2018, 198, 320-333.	5.2	5
87	Kinetic modeling of total oxidation of propane over rhodium. Combustion and Flame, 2021, , 111847.	5.2	5
88	Lattice Boltzmann model with generalized wall boundary conditions for arbitrary catalytic reactivity. Physical Review E, 2021, 103, 063303.	2.1	4
89	Experimental and numerical investigation of fuel-lean H₂/CO/air and H₂/CH₄/air catalytic microreactors. Combustion Science and Technology, 0, , .	2.3	2
90	High-pressure kinetic interactions between CO and H2 during syngas catalytic combustion on PdO. Proceedings of the Combustion Institute, 2022, , .	3.9	2

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91	Fuel-rich hetero-/homogeneous combustion of C3H8/O2/N2 mixtures over rhodium. Proceedings of the Combustion Institute, 2023, 39, 5601-5610.	3.9	1
92	Numerical Investigation of Performance Characteristics in a Propane-Fueled Mesoscale Catalytic Reactor. , 2007, , 551.		0
93	Numerical Modeling of Hydroperoxyl-Mediated Oxidative Dehydrogenation of Formic Acid under SCR-Relevant Conditions. Industrial & Engineering Chemistry Research, 2018, 57, 10206-10215.	3.7	0