Alberto Cuoci

List of Publications by Year
in descending order

121 papers	7,079 citations	57758 44 h-index	60623 81 g-index
127 all docs	127 docs citations	127 times ranked	3958 citing authors

#	Article	IF	Citations
1	Analysis of Wallâ€“flame Interaction in Laminar Non-premixed Combustion. Combustion Science and Technology, 2022, 194, 337-350.	2.3	8
2	On the radical behavior of large polycyclic aromatic hydrocarbons in soot formation and oxidation. Combustion and Flame, 2022, 235, 111692.	5.2	24
3	A virtual chemistry model for soot prediction in flames including radiative heat transfer. Combustion and Flame, 2022, 238, 111879.	5.2	5
4	Flame-controlling continuation method for extinction of counterflow sooting flames with detailed chemistry. , 2022, , .		0
5	Modeling soot particles as stable radicals: a chemical kinetic study on formation and oxidation. Part II. Soot oxidation in flow reactors and laminar flames. Combustion and Flame, 2022, 243, 112072.	5.2	7
6	Modeling soot particles as stable radicals: a chemical kinetic study on formation and oxidation. Part I. Soot formation in ethylene laminar premixed and counterflow diffusion flames. Combustion and Flame, 2022, 243, 112073.	5.2	6
7	Interface-resolved simulation of the evaporation and combustion of a fuel droplet suspended in normal gravity. Fuel, 2021, 287, 119413.	6.4	7
8	Feature extraction and artificial neural networks for the <i>on-the-fly</i> classification of high-dimensional thermochemical spaces in adaptive-chemistry simulations. Data-Centric Engineering, 2021, 2, .	2.3	2
9	Kinetic Modeling of the Ignition of Droplets of Fast Pyrolysis Bio-oil: Effect of Initial Diameter and Fuel Composition. Industrial & Engineering Chemistry Research, 2021, 60, 6719-6729.	3.7	2
10	Simulating combustion of a seven-component surrogate for a gasoline/ethanol blend including soot formation and comparison with experiments. Fuel, 2021, 288, 119451.	6.4	24
11	The chemistry of chemical recycling of solid plastic waste via pyrolysis and gasification: State-of-the-art, challenges, and future directions. Progress in Energy and Combustion Science, 2021, 84, 100901.	31.2	297
12	OptiSMOKE++: A toolbox for optimization of chemical kinetic mechanisms. Computer Physics Communications, 2021, 264, 107940.	7.5	14
13	Data Ecosystems for Scientific Experiments: Managing Combustion Experiments and Simulation Analyses in Chemical Engineering. Frontiers in Big Data, 2021, 4, 663410.	2.9	7
14	Unsupervised Data Analysis of Direct Numerical Simulation of a Turbulent Flame via Local Principal Component Analysis and Procustes Analysis. Advances in Intelligent Systems and Computing, 2021, , 460-469.	0.6	1
15	New Dynamic Scale Similarity Based Finite-Rate Combustion Models for LES and a priori DNS Assessment in Non-premixed Jet Flames with High Level of Local Extinction. Flow, Turbulence and Combustion, 2020, 104, 233-260.	2.6	5
16	Adaptive chemistry via pre-partitioning of composition space and mechanism reduction. Combustion and Flame, 2020, 211, 68-82.	5.2	46
17	The role of composition in the combustion of n-heptane/iso-butanol mixtures: experiments and detailed modelling. Combustion Theory and Modelling, 2020, 24, 1002-1020.	1.9	9
18	A virtual chemical mechanism for prediction of NO emissions from flames. Combustion Theory and Modelling, 2020, 24, 872-902.	1.9	4

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19	Impact of the Partitioning Method on Multidimensional Adaptive-Chemistry Simulations. Energies, 2020, 13, 2567.	3.1	13
20	A forward approach for the validation of soot sizingÂmodels using laser-induced incandescence (LII). Applied Physics B: Lasers and Optics, 2020, 126, 1.	2.2	3
21	An a priori DNS analysis of scale similarity based combustion models for LES of non-premixed jet flames. Flow, Turbulence and Combustion, 2020, 104, 605-624.	2.6	4
22	A post processing technique to predict primary particle size of sooting flames based on a chemical discrete sectional model: Application to diluted coflow flames. Combustion and Flame, 2019, 208, 122-138.	5.2	11
23	An experimental and CFD modeling study of suspended droplets evaporation in buoyancy driven convection. Chemical Engineering Journal, 2019, 375, 122006.	12.7	16
24	Prediction of flammable range for pure fuels and mixtures using detailed kinetics. Combustion and Flame, 2019, 207, 120-133.	5.2	27
25	Detailed kinetics of substituted phenolic species in pyrolysis bio-oils. Reaction Chemistry and Engineering, 2019, 4, 490-506.	3.7	63
26	Numerical modeling of reacting systems with detailed kinetic mechanisms. Computer Aided Chemical Engineering, 2019, , 675-721.	0.5	3
27	Towards a scientific data framework to support scientific model development. Data Science, 2019, 2, 245-273.	0.9	6
28	Buoyancy effect in sooting laminar premixed ethylene flame. Combustion and Flame, 2019, 205, 135-146.	5.2	18
29	Examination of a soot model in premixed laminar flames at fuel-rich conditions. Proceedings of the Combustion Institute, 2019, 37, 1013-1021.	3.9	109
30	Experimental and computational investigation of autoignition of jet fuels and surrogates in nonpremixed flows at elevated pressures. Proceedings of the Combustion Institute, 2019, 37, 1605-1614.	3.9	7
31	Large Eddy Simulation of MILD combustion using finite rate chemistry: Effect of combustion sub-grid closure. Proceedings of the Combustion Institute, 2019, 37, 4519-4529.	3.9	36
32	DropletSMOKE++: A comprehensive multiphase CFD framework for the evaporation of multidimensional fuel droplets. International Journal of Heat and Mass Transfer, 2019, 131, 836-853.	4.8	20
33	Numerical investigation of soot formation from microgravity droplet combustion using heterogeneous chemistry. Combustion and Flame, 2018, 189, 393-406.	5.2	19
34	A Model Investigation of Fuel and Operating Regime Impact on Homogeneous Charge Compression Ignition Engine Performance. Energy & Fuels, 2018, 32, 2282-2298.	5.1	4
35	The influence of low-temperature chemistry on partially-premixed counterflow n-heptane/air flames. Combustion and Flame, 2018, 188, 440-452.	5.2	10
36	Prediction of Combustion and Heat Release Rates in Non-Premixed Syngas Jet Flames Using Finite-Rate Scale Similarity Based Combustion Models. Energies, 2018, 11, 2464.	3.1	5

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37	Finite-rate chemistry modelling of non-conventional combustion regimes using a Partially-Stirred Reactor closure: Combustion model formulation and implementation details. Applied Energy, 2018, 225, 637-655.	10.1	52
38	A predictive model of biochar formation and characterization. Journal of Analytical and Applied Pyrolysis, 2018, 134, 326-335.	5.5	69
39	Effects of oxidant stream composition on non-premixed laminar flames with heated and diluted coflows. Combustion and Flame, 2017, 178, 297-310.	5.2	18
40	A computational framework for the pyrolysis of anisotropic biomass particles. Chemical Engineering Journal, 2017, 321, 458-473.	12.7	55
41	Catalysis Engineering: From the Catalytic Material to the Catalytic Reactor. Springer Series in Chemical Physics, 2017, , 189-218.	0.2	0
42	Cell agglomeration algorithm for coupling microkinetic modeling and steady-state CFD simulations of catalytic reactors. Computers and Chemical Engineering, 2017, 97, 175-182.	3.8	13
43	Numerical Studies of Premixed and Diffusion Meso/Micro-Scale Flames. Energy Procedia, 2017, 120, 673-680.	1.8	3
44	Edcsmoke: A new combustion solver for stiff chemistry based on OpenFOAMÂ®. AIP Conference Proceedings, 2017, , .	0.4	0
45	Comprehensive numerical study of the Adelaide Jet in Hot-Coflow burner by means of RANS and detailed chemistry. Energy, 2017, 139, 555-570.	8.8	65
46	Numerical investigation of soot-flame-vortex interaction. Proceedings of the Combustion Institute, 2017, 36, 753-761.	3.9	10
47	Flame extinction and low-temperature combustion of isolated fuel droplets of n-alkanes. Proceedings of the Combustion Institute, 2017, 36, 2531-2539.	3.9	21
48	<i>In situ</i> adaptive tabulation for the CFD simulation of heterogeneous reactors based on operatorâ€splitting algorithm. AIChE Journal, 2017, 63, 95-104.	3.6	28
49	The role of preferential evaporation on the ignition of multicomponent fuels in a homogeneous spray/air mixture. Proceedings of the Combustion Institute, 2017, 36, 2483-2491.	3.9	48
50	Skeletal kinetic mechanism for diesel combustion. Combustion Theory and Modelling, 2017, 21, 79-92.	1.9	8
51	Finite-rate chemistry modelling of non-conventional combustion regimes. Energy Procedia, 2017, 142, 1570-1576.	1.8	2
52	Detailed kinetic mechanism of gas-phase reactions of volatiles released from biomass pyrolysis. Biomass and Bioenergy, 2016, 93, 60-71.	5.7	73
53	A new predictive multi-zone model for HCCI engine combustion. Applied Energy, 2016, 178, 826-843.	10.1	35
54	Ignition Characteristics in Spatially Zero-, One- and Two-Dimensional Laminar Ethylene Flames. AIAA Journal, 2016, 54, 3255-3264.	2.6	11

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55	Probe effects in soot sampling from a burner-stabilized stagnation flame. Combustion and Flame, 2016, 167, 184-197.	5.2	45
56	Curve matching, a generalized framework for models/experiments comparison: An application to n-heptane combustion kinetic mechanisms. Combustion and Flame, 2016, 168, 186-203.	5.2	23
57	Laminar flame speeds of pentanol isomers: An experimental and modeling study. Combustion and Flame, 2016, 166, 1-18.	5.2	51
58	Handling contact points in reactive CFD simulations of heterogeneous catalytic fixed bed reactors. Chemical Engineering Science, 2016, 141, 240-249.	3.8	36
59	Hierarchical analysis of the gas-to-particle heat and mass transfer in micro packed bed reactors. Chemical Engineering Journal, 2016, 289, 471-478.	12.7	26
60	Skeletal mechanism reduction through species-targeted sensitivity analysis. Combustion and Flame, 2016, 163, 382-393.	5.2	150
61	A multiregion operator-splitting CFD approach for coupling microkinetic modeling with internal porous transport in heterogeneous catalytic reactors. Chemical Engineering Journal, 2016, 283, 1392-1404.	12.7	58
62	Extension of the Eddy Dissipation Concept for turbulence/chemistry interactions to MILD combustion. Fuel, 2016, 163, 98-111.	6.4	180
63	Numerical modeling of auto-ignition of isolated fuel droplets in microgravity. Proceedings of the Combustion Institute, 2015, 35, 1621-1627.	3.9	46
64	Kinetic modeling study of benzene and PAH formation in laminar methane flames. Combustion and Flame, 2015, 162, 1692-1711.	5.2	67
65	Experimental and kinetic modeling study of laminar coflow diffusion methane flames doped with 2-butanol. Proceedings of the Combustion Institute, 2015, 35, 863-871.	3.9	20
66	OpenSMOKE++: An object-oriented framework for the numerical modeling of reactive systems with detailed kinetic mechanisms. Computer Physics Communications, 2015, 192, 237-264.	7.5	324
67	Modeling soot formation in premixed flames using an Extended Conditional Quadrature Method of Moments. Combustion and Flame, 2015, 162, 2529-2543.	5.2	62
68	New reaction classes in the kinetic modeling of low temperature oxidation of n-alkanes. Combustion and Flame, 2015, 162, 1679-1691.	5.2	214
69	Ignition Characteristics in Spatially Zero-, One- and Two-Dimensional Laminar Ethylene Flames. , 2015, , .		0
70	Extractives Extend the Applicability of Multistep Kinetic Scheme of Biomass Pyrolysis. Energy & Fuels, 2015, 29, 6544-6555.	5.1	118
71	Kinetic modeling of particle size distribution of soot in a premixed burner-stabilized stagnation ethylene flame. Combustion and Flame, 2015, 162, 3356-3369.	5.2	169
72	Reduced kinetic mechanisms of diesel fuel surrogate for engine CFD simulations. Combustion and Flame, 2015, 162, 3991-4007.	5.2	73

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73	CFD Analysis of the Channel Shape Effect in Monolith Catalysts for the CH₄ Partial Oxidation on Rh. Chemie-Ingenieur-Technik, 2014, 86, 1099-1106.	0.8	15
74	Detailed Emissions Prediction for a Turbulent Swirling Nonpremixed Flame. Energy & Fuels, 2014, 28, 1470-1488.	5.1	17
75	Predictive-Quality Surface Reaction Chemistry in Real Reactor Models: Integrating First-Principles Kinetic Monte Carlo Simulations into Computational Fluid Dynamics. ACS Catalysis, 2014, 4, 4081-4092.	11.2	74
76	Reduced Kinetic Schemes of Complex Reaction Systems: Fossil and Biomassâ€Derived Transportation Fuels. International Journal of Chemical Kinetics, 2014, 46, 512-542.	1.6	401
77	Kinetic Modeling Study of Polycyclic Aromatic Hydrocarbons and Soot Formation in Acetylene Pyrolysis. Energy & Fuels, 2014, 28, 1489-1501.	5.1	70
78	Improved Kinetic Model of the Low-Temperature Oxidation of <i>n</i>-Heptane. Energy & Fuels, 2014, 28, 7178-7193.	5.1	102
79	Experimental and kinetic modeling study of PAH formation in methane coflow diffusion flames doped with n-butanol. Combustion and Flame, 2014, 161, 657-670.	5.2	40
80	A fully coupled, parallel approach for the post-processing of CFD data through reactor network analysis. Computers and Chemical Engineering, 2014, 60, 197-212.	3.8	21
81	Lumping and Reduction of Detailed Kinetic Schemes: an Effective Coupling. Industrial & Engineering Chemistry Research, 2014, 53, 9004-9016.	3.7	102
82	Extinction of laminar, premixed, counter-flow methane/air flames under unsteady conditions: Effect of H2 addition. Chemical Engineering Science, 2013, 93, 266-276.	3.8	18
83	Numerical Modeling of Laminar Flames with Detailed Kinetics Based on the Operator-Splitting Method. Energy & Fuels, 2013, 27, 7730-7753.	5.1	100
84	Experimental and detailed kinetic modeling study of PAH formation in laminar co-flow methane diffusion flames. Proceedings of the Combustion Institute, 2013, 34, 1811-1818.	3.9	32
85	A lumped approach to the kinetic modeling of pyrolysis and combustion of biodiesel fuels. Proceedings of the Combustion Institute, 2013, 34, 427-434.	3.9	57
86	A wide range kinetic modeling study of pyrolysis and oxidation of benzene. Combustion and Flame, 2013, 160, 1168-1190.	5.2	111
87	Predictive one step kinetic model of coal pyrolysis for CFD applications. Proceedings of the Combustion Institute, 2013, 34, 2401-2410.	3.9	55
88	A computational tool for the detailed kinetic modeling of laminar flames: Application to C2H4/CH4 coflow flames. Combustion and Flame, 2013, 160, 870-886.	5.2	133
89	Numerical Modeling of NO_{<i>x</i>} Formation in Turbulent Flames Using a Kinetic Post-processing Technique. Energy & Fuels, 2013, 27, 1104-1122.	5.1	42
90	Kinetic and fluid dynamic modeling of ethylene jet flames in diluted and heated oxidant stream combustion conditions. Applied Thermal Engineering, 2013, 52, 538-554.	6.0	62

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91	Coupling CFD with detailed microkinetic modeling in heterogeneous catalysis. Chemical Engineering Science, 2013, 96, 106-117.	3.8	105
92	Reactor network analysis of Claus furnace with detailed kinetics. Computer Aided Chemical Engineering, 2012, 30, 1007-1012.	0.5	4
93	A wide range kinetic modeling study of pyrolysis and oxidation of methyl butanoate and methyl decanoate. Note I: Lumped kinetic model of methyl butanoate and small methyl esters. Energy, 2012, 43, 124-139.	8.8	46
94	A Detailed Kinetic Study of Pyrolysis and Oxidation of Glycerol (Propane-1,2,3-triol). Combustion Science and Technology, 2012, 184, 1164-1178.	2.3	41
95	Detailed Multi-dimensional Study of Pollutant Formation in a Methane Diffusion Flame. Energy & Fuels, 2012, 26, 1598-1611.	5.1	33
96	An Experimental and Kinetic Modeling Study of Pyrolysis and Combustion of Acetoneâ€“Butanolâ€“Ethanol (ABE) Mixtures. Combustion Science and Technology, 2012, 184, 942-955.	2.3	55
97	Kinetic modelling of extinction and autoignition of condensed hydrocarbon fuels in non-premixed flows with comparison to experiment. Combustion and Flame, 2012, 159, 130-141.	5.2	14
98	Inhibition of hydrogen oxidation by HBr and Br2. Combustion and Flame, 2012, 159, 528-540.	5.2	31
99	Hierarchical and comparative kinetic modeling of laminar flame speeds of hydrocarbon and oxygenated fuels. Progress in Energy and Combustion Science, 2012, 38, 468-501.	31.2	773
100	Experimental and kinetic modeling study of combustion of JP-8, its surrogates and components in laminar premixed flows. Combustion Theory and Modelling, 2011, 15, 569-583.	1.9	32
101	Generalized Classes for Lower Levels of Supply Chain Management: Object-Oriented Approach. Computer Aided Chemical Engineering, 2010, 28, 139-144.	0.5	4
102	Fluid Dynamics and Detailed Kinetic Modeling of Pollutant Emissions From Lean Combustion Systems. , 2010, , .		0
103	Kinetic and fluid dynamics modeling of methane/hydrogen jet flames in diluted coflow. Applied Thermal Engineering, 2010, 30, 376-383.	6.0	125
104	An experimental and kinetic modeling study of n-propanol and iso-propanol combustion. Combustion and Flame, 2010, 157, 2-16.	5.2	157
105	Detailed kinetics in the mathematical model of fixed bed gasifiers. Computer Aided Chemical Engineering, 2010, , 829-834.	0.5	2
106	Kinetic Modeling of the Oxidation of Ethanol and Gasoline Surrogate Mixtures. Combustion Science and Technology, 2010, 182, 653-667.	2.3	62
107	Formation of soot and nitrogen oxides in unsteady counterflow diffusion flames. Combustion and Flame, 2009, 156, 2010-2022.	5.2	80
108	Biomass pyrolysis: Kinetic modelling and experimental validation under high temperature and flash heating rate conditions. Journal of Analytical and Applied Pyrolysis, 2009, 85, 260-267.	5.5	90

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109	Soot formation in unsteady counterflow diffusion flames. Proceedings of the Combustion Institute, 2009, 32, 1335-1342.	3.9	29
110	Experimental and kinetic modeling study of combustion of gasoline, its surrogates and components in laminar non-premixed flows. Proceedings of the Combustion Institute, 2009, 32, 493-500.	3.9	77
111	The solution of very large non-linear algebraic systems. Computers and Chemical Engineering, 2009, 33, 1727-1734.	3.8	8
112	Lumped Kinetic Modeling of the Oxidation of Isocetane (2,2,4,4,6,8,8-Heptamethylnonane) in a Jet-Stirred Reactor (JSR). Energy & Fuels, 2009, 23, 5287-5289.	5.1	15
113	Experimental and Modeling Study of a Low NO_xCombustor for Aero-Engine Turbofan. Combustion Science and Technology, 2009, 181, 483-495.	2.3	18
114	Dynamic analysis of oscillating flames. Computer Aided Chemical Engineering, 2009, , 749-753.	0.5	0
115	Robust and efficient numerical methods for the prediction of pollutants using detailed kinetics and fluid dynamics. Computer Aided Chemical Engineering, 2009, , 707-711.	0.5	1
116	Chemical Kinetics of Biomass Pyrolysis. Energy & Fuels, 2008, 22, 4292-4300.	5.1	568
117	Frequency Response of Counter Flow Diffusion Flames to Strain Rate Harmonic Oscillations. Combustion Science and Technology, 2008, 180, 767-784.	2.3	32
118	Kinetic Modeling of Soot Formation in Turbulent Nonpremixed Flames. Environmental Engineering Science, 2008, 25, 1407-1422.	1.6	17
119	The ignition, combustion and flame structure of carbon monoxide/hydrogen mixtures. Note 2: Fluid dynamics and kinetic aspects of syngas combustion. International Journal of Hydrogen Energy, 2007, 32, 3486-3500.	7.1	74
120	Autoignition and burning rates of fuel droplets under microgravity. Combustion and Flame, 2005, 143, 211-226.	5.2	96
121	Detailed Kinetic Analysis of HCCI Combustion Using a New Multi-Zone Model and CFD Simulations. SAE International Journal of Engines, 0, 6, 1594-1609.	0.4	15