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	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
2	Chemical Kinetics of Biomass Pyrolysis. Energy & Fuels, 2008, 22, 4292-4300.	5.1	568
3	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
4	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
5	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
6	New reaction classes in the kinetic modeling of low temperature oxidation of n-alkanes. Combustion and Flame, 2015, 162, 1679-1691.	5.2	214
7	Extension of the Eddy Dissipation Concept for turbulence/chemistry interactions to MILD combustion. Fuel, 2016, 163, 98-111.	6.4	180
8	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
9	An experimental and kinetic modeling study of n-propanol and iso-propanol combustion. Combustion and Flame, 2010, 157, 2-16.	5.2	157
10	Skeletal mechanism reduction through species-targeted sensitivity analysis. Combustion and Flame, 2016, 163, 382-393.	5.2	150
11	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
12	Kinetic and fluid dynamics modeling of methane/hydrogen jet flames in diluted coflow. Applied Thermal Engineering, 2010, 30, 376-383.	6.0	125
13	Extractives Extend the Applicability of Multistep Kinetic Scheme of Biomass Pyrolysis. Energy & Fuels, 2015, 29, 6544-6555.	5.1	118
14	A wide range kinetic modeling study of pyrolysis and oxidation of benzene. Combustion and Flame, 2013, 160, 1168-1190.	5.2	111
15	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
16	Coupling CFD with detailed microkinetic modeling in heterogeneous catalysis. Chemical Engineering Science, 2013, 96, 106-117.	3.8	105
17	Improved Kinetic Model of the Low-Temperature Oxidation of n-Heptane. Energy & Fuels, 2014, 28, 7178-7193.	5.1	102
18	Lumping and Reduction of Detailed Kinetic Schemes: an Effective Coupling. Industrial & Engineering Chemistry Research, 2014, 53, 9004-9016.	3.7	102

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19	Numerical Modeling of Laminar Flames with Detailed Kinetics Based on the Operator-Splitting Method. Energy & Fuels, 2013, 27, 7730-7753.	5.1	100
20	Autoignition and burning rates of fuel droplets under microgravity. Combustion and Flame, 2005, 143, 211-226.	5.2	96
21	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
22	Formation of soot and nitrogen oxides in unsteady counterflow diffusion flames. Combustion and Flame, 2009, 156, 2010-2022.	5.2	80
23	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
24	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
25	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
26	Reduced kinetic mechanisms of diesel fuel surrogate for engine CFD simulations. Combustion and Flame, 2015, 162, 3991-4007.	5.2	73
27	Detailed kinetic mechanism of gas-phase reactions of volatiles released from biomass pyrolysis. Biomass and Bioenergy, 2016, 93, 60-71.	5.7	73
28	Kinetic Modeling Study of Polycyclic Aromatic Hydrocarbons and Soot Formation in Acetylene Pyrolysis. Energy & Fuels, 2014, 28, 1489-1501.	5.1	70
29	A predictive model of biochar formation and characterization. Journal of Analytical and Applied Pyrolysis, 2018, 134, 326-335.	5.5	69
30	Kinetic modeling study of benzene and PAH formation in laminar methane flames. Combustion and Flame, 2015, 162, 1692-1711.	5.2	67
31	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
32	Detailed kinetics of substituted phenolic species in pyrolysis bio-oils. Reaction Chemistry and Engineering, 2019, 4, 490-506.	3.7	63
33	Kinetic Modeling of the Oxidation of Ethanol and Gasoline Surrogate Mixtures. Combustion Science and Technology, 2010, 182, 653-667.	2.3	62
34	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
35	Modeling soot formation in premixed flames using an Extended Conditional Quadrature Method of Moments. Combustion and Flame, 2015, 162, 2529-2543.	5.2	62
36	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

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37	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
38	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
39	Predictive one step kinetic model of coal pyrolysis for CFD applications. Proceedings of the Combustion Institute, 2013, 34, 2401-2410.	3.9	55
40	A computational framework for the pyrolysis of anisotropic biomass particles. Chemical Engineering Journal, 2017, 321, 458-473.	12.7	55
41	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
42	Laminar flame speeds of pentanol isomers: An experimental and modeling study. Combustion and Flame, 2016, 166, 1-18.	5.2	51
43	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
44	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
45	Numerical modeling of auto-ignition of isolated fuel droplets in microgravity. Proceedings of the Combustion Institute, 2015, 35, 1621-1627.	3.9	46
46	Adaptive chemistry via pre-partitioning of composition space and mechanism reduction. Combustion and Flame, 2020, 211, 68-82.	5.2	46
47	Probe effects in soot sampling from a burner-stabilized stagnation flame. Combustion and Flame, 2016, 167, 184-197.	5.2	45
48	Numerical Modeling of NO_x Formation in Turbulent Flames Using a Kinetic Post-processing Technique. Energy & Fuels, 2013, 27, 1104-1122.	5.1	42
49	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
50	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
51	Handling contact points in reactive CFD simulations of heterogeneous catalytic fixed bed reactors. Chemical Engineering Science, 2016, 141, 240-249.	3.8	36
52	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
53	A new predictive multi-zone model for HCCI engine combustion. Applied Energy, 2016, 178, 826-843.	10.1	35
54	Detailed Multi-dimensional Study of Pollutant Formation in a Methane Diffusion Flame. Energy & Fuels, 2012, 26, 1598-1611.	5.1	33

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55	Frequency Response of Counter Flow Diffusion Flames to Strain Rate Harmonic Oscillations. Combustion Science and Technology, 2008, 180, 767-784.	2.3	32
56	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
57	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
58	Inhibition of hydrogen oxidation by HBr and Br2. Combustion and Flame, 2012, 159, 528-540.	5.2	31
59	Soot formation in unsteady counterflow diffusion flames. Proceedings of the Combustion Institute, 2009, 32, 1335-1342.	3.9	29
60	In situ adaptive tabulation for the CFD simulation of heterogeneous reactors based on operatorâ€splitting algorithm. AICHE Journal, 2017, 63, 95-104.	3.6	28
61	Prediction of flammable range for pure fuels and mixtures using detailed kinetics. Combustion and Flame, 2019, 207, 120-133.	5.2	27
62	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
63	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
64	On the radical behavior of large polycyclic aromatic hydrocarbons in soot formation and oxidation. Combustion and Flame, 2022, 235, 111692.	5.2	24
65	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
66	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
67	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
68	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
69	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
70	Numerical investigation of soot formation from microgravity droplet combustion using heterogeneous chemistry. Combustion and Flame, 2018, 189, 393-406.	5.2	19
71	Experimental and Modeling Study of a Low NO_xCombustor for Aero-Engine Turbofan. Combustion Science and Technology, 2009, 181, 483-495.	2.3	18
72	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

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73	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
74	Buoyancy effect in sooting laminar premixed ethylene flame. Combustion and Flame, 2019, 205, 135-146.	5.2	18
75	Kinetic Modeling of Soot Formation in Turbulent Nonpremixed Flames. Environmental Engineering Science, 2008, 25, 1407-1422.	1.6	17
76	Detailed Emissions Prediction for a Turbulent Swirling Nonpremixed Flame. Energy & Fuels, 2014, 28, 1470-1488.	5.1	17
77	An experimental and CFD modeling study of suspended droplets evaporation in buoyancy driven convection. Chemical Engineering Journal, 2019, 375, 122006.	12.7	16
78	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
79	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
80	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
81	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
82	OptiSMOKE++: A toolbox for optimization of chemical kinetic mechanisms. Computer Physics Communications, 2021, 264, 107940.	7.5	14
83	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
84	Impact of the Partitioning Method on Multidimensional Adaptive-Chemistry Simulations. Energies, 2020, 13, 2567.	3.1	13
85	Ignition Characteristics in Spatially Zero-, One- and Two-Dimensional Laminar Ethylene Flames. AIAA Journal, 2016, 54, 3255-3264.	2.6	11
86	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
87	Numerical investigation of soot-flame-vortex interaction. Proceedings of the Combustion Institute, 2017, 36, 753-761.	3.9	10
88	The influence of low-temperature chemistry on partially-premixed counterflow n-heptane/air flames. Combustion and Flame, 2018, 188, 440-452.	5.2	10
89	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
90	The solution of very large non-linear algebraic systems. Computers and Chemical Engineering, 2009, 33, 1727-1734.	3.8	8

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91	Skeletal kinetic mechanism for diesel combustion. Combustion Theory and Modelling, 2017, 21, 79-92.	1.9	8
92	Analysis of Wallâ€“flame Interaction in Laminar Non-premixed Combustion. Combustion Science and Technology, 2022, 194, 337-350.	2.3	8
93	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
94	Interface-resolved simulation of the evaporation and combustion of a fuel droplet suspended in normal gravity. Fuel, 2021, 287, 119413.	6.4	7
95	Data Ecosystems for Scientific Experiments: Managing Combustion Experiments and Simulation Analyses in Chemical Engineering. Frontiers in Big Data, 2021, 4, 663410.	2.9	7
96	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
97	Towards a scientific data framework to support scientific model development. Data Science, 2019, 2, 245-273.	0.9	6
98	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
99	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
100	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
101	A virtual chemistry model for soot prediction in flames including radiative heat transfer. Combustion and Flame, 2022, 238, 111879.	5.2	5
102	Generalized Classes for Lower Levels of Supply Chain Management: Object-Oriented Approach. Computer Aided Chemical Engineering, 2010, 28, 139-144.	0.5	4
103	Reactor network analysis of Claus furnace with detailed kinetics. Computer Aided Chemical Engineering, 2012, 30, 1007-1012.	0.5	4
104	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
105	A virtual chemical mechanism for prediction of NO emissions from flames. Combustion Theory and Modelling, 2020, 24, 872-902.	1.9	4
106	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
107	Numerical Studies of Premixed and Diffusion Meso/Micro-Scale Flames. Energy Procedia, 2017, 120, 673-680.	1.8	3
108	Numerical modeling of reacting systems with detailed kinetic mechanisms. Computer Aided Chemical Engineering, 2019, , 675-721.	0.5	3

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109	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
110	Detailed kinetics in the mathematical model of fixed bed gasifiers. Computer Aided Chemical Engineering, 2010, , 829-834.	0.5	2
111	Finite-rate chemistry modelling of non-conventional combustion regimes. Energy Procedia, 2017, 142, 1570-1576.	1.8	2
112	Feature extraction and artificial neural networks for the on-the-fly classification of high-dimensional thermochemical spaces in adaptive-chemistry simulations. Data-Centric Engineering, 2021, 2, .	2.3	2
113	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
114	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
115	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
116	Dynamic analysis of oscillating flames. Computer Aided Chemical Engineering, 2009, , 749-753.	0.5	0
117	Fluid Dynamics and Detailed Kinetic Modeling of Pollutant Emissions From Lean Combustion Systems. , 2010, , .		0
118	Ignition Characteristics in Spatially Zero-, One- and Two-Dimensional Laminar Ethylene Flames. , 2015, , .		0
119	Catalysis Engineering: From the Catalytic Material to the Catalytic Reactor. Springer Series in Chemical Physics, 2017, , 189-218.	0.2	0
120	Edcsmoke: A new combustion solver for stiff chemistry based on OpenFOAMÂ®. AIP Conference Proceedings, 2017, , .	0.4	0
121	Flame-controlling continuation method for extinction of counterflow sooting flames with detailed chemistry. , 2022, , .		0