

Alberto Cuoci

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116
papers

4,994
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39
h-index

69
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122
ext. papers

6,066
ext. citations

5.2
avg, IF

5.81
L-index

#	Paper	IF	Citations
116	Hierarchical and comparative kinetic modeling of laminar flame speeds of hydrocarbon and oxygenated fuels. <i>Progress in Energy and Combustion Science</i> , 2012 , 38, 468-501	33.6	603
115	Chemical Kinetics of Biomass Pyrolysis. <i>Energy & Fuels</i> , 2008 , 22, 4292-4300	4.1	465
114	Reduced Kinetic Schemes of Complex Reaction Systems: Fossil and Biomass-Derived Transportation Fuels. <i>International Journal of Chemical Kinetics</i> , 2014 , 46, 512-542	1.4	224
113	OpenSMOKE++: An object-oriented framework for the numerical modeling of reactive systems with detailed kinetic mechanisms. <i>Computer Physics Communications</i> , 2015 , 192, 237-264	4.2	196
112	Kinetic modeling of particle size distribution of soot in a premixed burner-stabilized stagnation ethylene flame. <i>Combustion and Flame</i> , 2015 , 162, 3356-3369	5.3	128
111	An experimental and kinetic modeling study of n-propanol and iso-propanol combustion. <i>Combustion and Flame</i> , 2010 , 157, 2-16	5.3	128
110	Extension of the Eddy Dissipation Concept for turbulence/chemistry interactions to MILD combustion. <i>Fuel</i> , 2016 , 163, 98-111	7.1	121
109	New reaction classes in the kinetic modeling of low temperature oxidation of n-alkanes. <i>Combustion and Flame</i> , 2015 , 162, 1679-1691	5.3	107
108	Kinetic and fluid dynamics modeling of methane/hydrogen jet flames in diluted coflow. <i>Applied Thermal Engineering</i> , 2010 , 30, 376-383	5.8	105
107	A computational tool for the detailed kinetic modeling of laminar flames: Application to C ₂ H ₄ /CH ₄ coflow flames. <i>Combustion and Flame</i> , 2013 , 160, 870-886	5.3	101
106	Skeletal mechanism reduction through species-targeted sensitivity analysis. <i>Combustion and Flame</i> , 2016 , 163, 382-393	5.3	91
105	A wide range kinetic modeling study of pyrolysis and oxidation of benzene. <i>Combustion and Flame</i> , 2013 , 160, 1168-1190	5.3	90
104	Coupling CFD with detailed microkinetic modeling in heterogeneous catalysis. <i>Chemical Engineering Science</i> , 2013 , 96, 106-117	4.4	83
103	Biomass pyrolysis: Kinetic modelling and experimental validation under high temperature and flash heating rate conditions. <i>Journal of Analytical and Applied Pyrolysis</i> , 2009 , 85, 260-267	6	80
102	Autoignition and burning rates of fuel droplets under microgravity. <i>Combustion and Flame</i> , 2005 , 143, 211-226	5.3	79
101	The chemistry of chemical recycling of solid plastic waste via pyrolysis and gasification: State-of-the-art, challenges, and future directions. <i>Progress in Energy and Combustion Science</i> , 2021 , 84, 100901	33.6	78
100	Extractives Extend the Applicability of Multistep Kinetic Scheme of Biomass Pyrolysis. <i>Energy & Fuels</i> , 2015 , 29, 6544-6555	4.1	76

99	Improved Kinetic Model of the Low-Temperature Oxidation of n-Heptane. <i>Energy & Fuels</i> , 2014 , 28, 7178-7193	4.1	75
98	Experimental and kinetic modeling study of combustion of gasoline, its surrogates and components in laminar non-premixed flows. <i>Proceedings of the Combustion Institute</i> , 2009 , 32, 493-500	5.9	75
97	Numerical Modeling of Laminar Flames with Detailed Kinetics Based on the Operator-Splitting Method. <i>Energy & Fuels</i> , 2013 , 27, 7730-7753	4.1	71
96	Lumping and Reduction of Detailed Kinetic Schemes: an Effective Coupling. <i>Industrial & Engineering Chemistry Research</i> , 2014 , 53, 9004-9016	3.9	69
95	Formation of soot and nitrogen oxides in unsteady counterflow diffusion flames. <i>Combustion and Flame</i> , 2009 , 156, 2010-2022	5.3	66
94	Predictive-Quality Surface Reaction Chemistry in Real Reactor Models: Integrating First-Principles Kinetic Monte Carlo Simulations into Computational Fluid Dynamics. <i>ACS Catalysis</i> , 2014 , 4, 4081-4092	13.1	62
93	The ignition, combustion and flame structure of carbon monoxide/hydrogen mixtures. Note 2: Fluid dynamics and kinetic aspects of syngas combustion. <i>International Journal of Hydrogen Energy</i> , 2007 , 32, 3486-3500	6.7	62
92	Examination of a soot model in premixed laminar flames at fuel-rich conditions. <i>Proceedings of the Combustion Institute</i> , 2019 , 37, 1013-1021	5.9	62
91	Reduced kinetic mechanisms of diesel fuel surrogate for engine CFD simulations. <i>Combustion and Flame</i> , 2015 , 162, 3991-4007	5.3	58
90	Detailed kinetic mechanism of gas-phase reactions of volatiles released from biomass pyrolysis. <i>Biomass and Bioenergy</i> , 2016 , 93, 60-71	5.3	56
89	Kinetic Modeling of the Oxidation of Ethanol and Gasoline Surrogate Mixtures. <i>Combustion Science and Technology</i> , 2010 , 182, 653-667	1.5	55
88	Kinetic Modeling Study of Polycyclic Aromatic Hydrocarbons and Soot Formation in Acetylene Pyrolysis. <i>Energy & Fuels</i> , 2014 , 28, 1489-1501	4.1	53
87	Modeling soot formation in premixed flames using an Extended Conditional Quadrature Method of Moments. <i>Combustion and Flame</i> , 2015 , 162, 2529-2543	5.3	51
86	An Experimental and Kinetic Modeling Study of Pyrolysis and Combustion of Acetone/Butanol/Ethanol (ABE) Mixtures. <i>Combustion Science and Technology</i> , 2012 , 184, 942-955	1.5	51
85	Kinetic modeling study of benzene and PAH formation in laminar methane flames. <i>Combustion and Flame</i> , 2015 , 162, 1692-1711	5.3	50
84	Detailed kinetics of substituted phenolic species in pyrolysis bio-oils. <i>Reaction Chemistry and Engineering</i> , 2019 , 4, 490-506	4.9	48
83	Comprehensive numerical study of the Adelaide Jet in Hot-Coflow burner by means of RANS and detailed chemistry. <i>Energy</i> , 2017 , 139, 555-570	7.9	47
82	Predictive one step kinetic model of coal pyrolysis for CFD applications. <i>Proceedings of the Combustion Institute</i> , 2013 , 34, 2401-2410	5.9	47

81	Kinetic and fluid dynamic modeling of ethylene jet flames in diluted and heated oxidant stream combustion conditions. <i>Applied Thermal Engineering</i> , 2013 , 52, 538-554	5.8	47
80	A multiregion operator-splitting CFD approach for coupling microkinetic modeling with internal porous transport in heterogeneous catalytic reactors. <i>Chemical Engineering Journal</i> , 2016 , 283, 1392-1404	14.7	46
79	A lumped approach to the kinetic modeling of pyrolysis and combustion of biodiesel fuels. <i>Proceedings of the Combustion Institute</i> , 2013 , 34, 427-434	5.9	43
78	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. <i>Energy</i> , 2012 , 43, 124-139	7.9	41
77	Laminar flame speeds of pentanol isomers: An experimental and modeling study. <i>Combustion and Flame</i> , 2016 , 166, 1-18	5.3	39
76	A predictive model of biochar formation and characterization. <i>Journal of Analytical and Applied Pyrolysis</i> , 2018 , 134, 326-335	6	39
75	A computational framework for the pyrolysis of anisotropic biomass particles. <i>Chemical Engineering Journal</i> , 2017 , 321, 458-473	14.7	38
74	Probe effects in soot sampling from a burner-stabilized stagnation flame. <i>Combustion and Flame</i> , 2016 , 167, 184-197	5.3	38
73	Numerical modeling of auto-ignition of isolated fuel droplets in microgravity. <i>Proceedings of the Combustion Institute</i> , 2015 , 35, 1621-1627	5.9	37
72	Numerical Modeling of NO _x Formation in Turbulent Flames Using a Kinetic Post-processing Technique. <i>Energy & Fuels</i> , 2013 , 27, 1104-1122	4.1	37
71	Experimental and kinetic modeling study of PAH formation in methane coflow diffusion flames doped with n-butanol. <i>Combustion and Flame</i> , 2014 , 161, 657-670	5.3	32
70	A Detailed Kinetic Study of Pyrolysis and Oxidation of Glycerol (Propane-1,2,3-triol). <i>Combustion Science and Technology</i> , 2012 , 184, 1164-1178	1.5	31
69	Finite-rate chemistry modelling of non-conventional combustion regimes using a Partially-Stirred Reactor closure: Combustion model formulation and implementation details. <i>Applied Energy</i> , 2018 , 225, 637-655	10.7	30
68	Handling contact points in reactive CFD simulations of heterogeneous catalytic fixed bed reactors. <i>Chemical Engineering Science</i> , 2016 , 141, 240-249	4.4	28
67	Experimental and kinetic modeling study of combustion of JP-8, its surrogates and components in laminar premixed flows. <i>Combustion Theory and Modelling</i> , 2011 , 15, 569-583	1.5	28
66	The role of preferential evaporation on the ignition of multicomponent fuels in a homogeneous spray/air mixture. <i>Proceedings of the Combustion Institute</i> , 2017 , 36, 2483-2491	5.9	27
65	Inhibition of hydrogen oxidation by HBr and Br ₂ . <i>Combustion and Flame</i> , 2012 , 159, 528-540	5.3	27
64	Frequency Response of Counter Flow Diffusion Flames to Strain Rate Harmonic Oscillations. <i>Combustion Science and Technology</i> , 2008 , 180, 767-784	1.5	27

63	Experimental and detailed kinetic modeling study of PAH formation in laminar co-flow methane diffusion flames. <i>Proceedings of the Combustion Institute</i> , 2013 , 34, 1811-1818	5.9	26
62	Detailed Multi-dimensional Study of Pollutant Formation in a Methane Diffusion Flame. <i>Energy & Fuels</i> , 2012 , 26, 1598-1611	4.1	26
61	A new predictive multi-zone model for HCCI engine combustion. <i>Applied Energy</i> , 2016 , 178, 826-843	10.7	25
60	Soot formation in unsteady counterflow diffusion flames. <i>Proceedings of the Combustion Institute</i> , 2009 , 32, 1335-1342	5.9	23
59	Large Eddy Simulation of MILD combustion using finite rate chemistry: Effect of combustion sub-grid closure. <i>Proceedings of the Combustion Institute</i> , 2019 , 37, 4519-4529	5.9	22
58	Hierarchical analysis of the gas-to-particle heat and mass transfer in micro packed bed reactors. <i>Chemical Engineering Journal</i> , 2016 , 289, 471-478	14.7	21
57	Prediction of flammable range for pure fuels and mixtures using detailed kinetics. <i>Combustion and Flame</i> , 2019 , 207, 120-133	5.3	21
56	Experimental and kinetic modeling study of laminar coflow diffusion methane flames doped with 2-butanol. <i>Proceedings of the Combustion Institute</i> , 2015 , 35, 863-871	5.9	18
55	Extinction of laminar, premixed, counter-flow methane/air flames under unsteady conditions: Effect of H ₂ addition. <i>Chemical Engineering Science</i> , 2013 , 93, 266-276	4.4	16
54	Experimental and Modeling Study of a Low NO _x Combustor for Aero-Engine Turbofan. <i>Combustion Science and Technology</i> , 2009 , 181, 483-495	1.5	16
53	Numerical investigation of soot formation from microgravity droplet combustion using heterogeneous chemistry. <i>Combustion and Flame</i> , 2018 , 189, 393-406	5.3	15
52	Adaptive chemistry via pre-partitioning of composition space and mechanism reduction. <i>Combustion and Flame</i> , 2020 , 211, 68-82	5.3	15
51	Curve matching, a generalized framework for models/experiments comparison: An application to n-heptane combustion kinetic mechanisms. <i>Combustion and Flame</i> , 2016 , 168, 186-203	5.3	14
50	Detailed Emissions Prediction for a Turbulent Swirling Nonpremixed Flame. <i>Energy & Fuels</i> , 2014 , 28, 1470-1488	4.1	14
49	Flame extinction and low-temperature combustion of isolated fuel droplets of n-alkanes. <i>Proceedings of the Combustion Institute</i> , 2017 , 36, 2531-2539	5.9	14
48	In situ adaptive tabulation for the CFD simulation of heterogeneous reactors based on operator-splitting algorithm. <i>AIChE Journal</i> , 2017 , 63, 95-104	3.6	14
47	CFD Analysis of the Channel Shape Effect in Monolith Catalysts for the CH ₄ Partial Oxidation on Rh. <i>Chemie-Ingenieur-Technik</i> , 2014 , 86, 1099-1106	0.8	14
46	Detailed Kinetic Analysis of HCCI Combustion Using a New Multi-Zone Model and CFD Simulations. <i>SAE International Journal of Engines</i> , 2013 , 6, 1594-1609	2.4	14

45	Lumped Kinetic Modeling of the Oxidation of Isocetane (2,2,4,4,6,8,8-Heptamethylnonane) in a Jet-Stirred Reactor (JSR). <i>Energy & Fuels</i> , 2009 , 23, 5287-5289	4.1	14
44	Effects of oxidant stream composition on non-premixed laminar flames with heated and diluted coflows. <i>Combustion and Flame</i> , 2017 , 178, 297-310	5.3	13
43	A fully coupled, parallel approach for the post-processing of CFD data through reactor network analysis. <i>Computers and Chemical Engineering</i> , 2014 , 60, 197-212	4	13
42	Kinetic modelling of extinction and autoignition of condensed hydrocarbon fuels in non-premixed flows with comparison to experiment. <i>Combustion and Flame</i> , 2012 , 159, 130-141	5.3	13
41	Kinetic Modeling of Soot Formation in Turbulent Nonpremixed Flames. <i>Environmental Engineering Science</i> , 2008 , 25, 1407-1422	2	13
40	DropletSMOKE++: A comprehensive multiphase CFD framework for the evaporation of multidimensional fuel droplets. <i>International Journal of Heat and Mass Transfer</i> , 2019 , 131, 836-853	4.9	13
39	Ignition Characteristics in Spatially Zero-, One- and Two-Dimensional Laminar Ethylene Flames. <i>AIAA Journal</i> , 2016 , 54, 3255-3264	2.1	11
38	Cell agglomeration algorithm for coupling microkinetic modeling and steady-state CFD simulations of catalytic reactors. <i>Computers and Chemical Engineering</i> , 2017 , 97, 175-182	4	9
37	Buoyancy effect in sooting laminar premixed ethylene flame. <i>Combustion and Flame</i> , 2019 , 205, 135-146	5.3	8
36	The influence of low-temperature chemistry on partially-premixed counterflow n-heptane/air flames. <i>Combustion and Flame</i> , 2018 , 188, 440-452	5.3	8
35	A post processing technique to predict primary particle size of sooting flames based on a chemical discrete sectional model: Application to diluted coflow flames. <i>Combustion and Flame</i> , 2019 , 208, 122-138	5.3	7
34	An experimental and CFD modeling study of suspended droplets evaporation in buoyancy driven convection. <i>Chemical Engineering Journal</i> , 2019 , 375, 122006	14.7	7
33	Skeletal kinetic mechanism for diesel combustion. <i>Combustion Theory and Modelling</i> , 2017 , 21, 79-92	1.5	7
32	The solution of very large non-linear algebraic systems. <i>Computers and Chemical Engineering</i> , 2009 , 33, 1727-1734	4	7
31	Numerical investigation of soot-flame-vortex interaction. <i>Proceedings of the Combustion Institute</i> , 2017 , 36, 753-761	5.9	6
30	Simulating combustion of a seven-component surrogate for a gasoline/ethanol blend including soot formation and comparison with experiments. <i>Fuel</i> , 2021 , 288, 119451	7.1	6
29	Experimental and computational investigation of autoignition of jet fuels and surrogates in nonpremixed flows at elevated pressures. <i>Proceedings of the Combustion Institute</i> , 2019 , 37, 1605-1614	5.9	6
28	The role of composition in the combustion of n-heptane/iso-butanol mixtures: experiments and detailed modelling. <i>Combustion Theory and Modelling</i> , 2020 , 24, 1002-1020	1.5	5

27	Prediction of Combustion and Heat Release Rates in Non-Premixed Syngas Jet Flames Using Finite-Rate Scale Similarity Based Combustion Models. <i>Energies</i> , 2018 , 11, 2464	3.1	5
26	Towards a scientific data framework to support scientific model development. <i>Data Science</i> , 2019 , 2, 245-273	2.2	4
25	A Model Investigation of Fuel and Operating Regime Impact on Homogeneous Charge Compression Ignition Engine Performance. <i>Energy & Fuels</i> , 2018 , 32, 2282-2298	4.1	4
24	Reactor network analysis of Claus furnace with detailed kinetics. <i>Computer Aided Chemical Engineering</i> , 2012 , 30, 1007-1012	0.6	4
23	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. <i>Flow, Turbulence and Combustion</i> , 2020 , 104, 233-260	2.5	4
22	Generalized Classes for Lower Levels of Supply Chain Management: Object-Oriented Approach. <i>Computer Aided Chemical Engineering</i> , 2010 , 28, 139-144	0.6	3
21	Interface-resolved simulation of the evaporation and combustion of a fuel droplet suspended in normal gravity. <i>Fuel</i> , 2021 , 287, 119413	7.1	3
20	On the radical behavior of large polycyclic aromatic hydrocarbons in soot formation and oxidation. <i>Combustion and Flame</i> , 2021 , 235, 111692	5.3	3
19	Modeling soot particles as stable radicals: a chemical kinetic study on formation and oxidation. Part II. Soot oxidation in flow reactors and laminar flames. <i>Combustion and Flame</i> , 2022 , 112072	5.3	3
18	Numerical Studies of Premixed and Diffusion Meso/Micro-Scale Flames. <i>Energy Procedia</i> , 2017 , 120, 673-680	6.8	2
17	Impact of the Partitioning Method on Multidimensional Adaptive-Chemistry Simulations. <i>Energies</i> , 2020 , 13, 2567	3.1	2
16	A forward approach for the validation of soot sizing models using laser-induced incandescence (LII). <i>Applied Physics B: Lasers and Optics</i> , 2020 , 126, 1	1.9	2
15	OptiSMOKE++: A toolbox for optimization of chemical kinetic mechanisms. <i>Computer Physics Communications</i> , 2021 , 264, 107940	4.2	2
14	Analysis of Wall-Flame Interaction in Laminar Non-premixed Combustion. <i>Combustion Science and Technology</i> , 2019 , 1-14	1.5	2
13	Kinetic Modeling of the Ignition of Droplets of Fast Pyrolysis Bio-oil: Effect of Initial Diameter and Fuel Composition. <i>Industrial & Engineering Chemistry Research</i> , 2021 , 60, 6719-6729	3.9	2
12	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. <i>Combustion and Flame</i> , 2022 , 112073	5.3	2
11	Numerical modeling of reacting systems with detailed kinetic mechanisms. <i>Computer Aided Chemical Engineering</i> , 2019 , 675-721	0.6	1
10	A virtual chemical mechanism for prediction of NO emissions from flames. <i>Combustion Theory and Modelling</i> , 2020 , 24, 872-902	1.5	1

9	Detailed kinetics in the mathematical model of fixed bed gasifiers. <i>Computer Aided Chemical Engineering</i> , 2010 , 829-834	0.6	1
8	Robust and efficient numerical methods for the prediction of pollutants using detailed kinetics and fluid dynamics. <i>Computer Aided Chemical Engineering</i> , 2009 , 707-711	0.6	1
7	A virtual chemistry model for soot prediction in flames including radiative heat transfer. <i>Combustion and Flame</i> , 2022 , 238, 111879	5.3	0
6	An a priori DNS analysis of scale similarity based combustion models for LES of non-premixed jet flames. <i>Flow, Turbulence and Combustion</i> , 2020 , 104, 605-624	2.5	0
5	Data Ecosystems for Scientific Experiments: Managing Combustion Experiments and Simulation Analyses in Chemical Engineering. <i>Frontiers in Big Data</i> , 2021 , 4, 663410	2.8	0
4	Catalysis Engineering: From the Catalytic Material to the Catalytic Reactor. <i>Springer Series in Chemical Physics</i> , 2017 , 189-218	0.3	
3	Finite-rate chemistry modelling of non-conventional combustion regimes. <i>Energy Procedia</i> , 2017 , 142, 1570-1576	2.3	
2	Dynamic analysis of oscillating flames. <i>Computer Aided Chemical Engineering</i> , 2009 , 749-753	0.6	
1	Unsupervised Data Analysis of Direct Numerical Simulation of a Turbulent Flame via Local Principal Component Analysis and Procrustes Analysis. <i>Advances in Intelligent Systems and Computing</i> , 2021 , 460-469	0.4	