Alessio Frassoldati

List of Publications by Year
in descending order

135 papers	9,426 citations	34105 52 h-index	40979 93 g-index

138 all docs	138 docs citations	138 times ranked	4836 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	Detailed kinetic modeling of the thermal degradation of lignins. Biomass and Bioenergy, 2010, 34, 290-301.	5.7	290
7	Wide-Range Kinetic Modeling Study of the Pyrolysis, Partial Oxidation, and Combustion of Heavyn-Alkanes. Industrial & Engineering Chemistry Research, 2005, 44, 5170-5183.	3.7	253
8	Kinetic modeling of the interactions between NO and hydrocarbons in the oxidation of hydrocarbons at low temperatures. Combustion and Flame, 2003, 132, 188-207.	5.2	243
9	An experimental and kinetic modeling study of combustion of isomers of butanol. Combustion and Flame, 2010, 157, 2137-2154.	5.2	224
10	New reaction classes in the kinetic modeling of low temperature oxidation of n-alkanes. Combustion and Flame, 2015, 162, 1679-1691.	5.2	214
11	Experimental and kinetic modeling study of combustion of JP-8, its surrogates and reference components in laminar nonpremixed flows. Proceedings of the Combustion Institute, 2007, 31, 393-400.	3.9	185
12	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
13	The ignition, combustion and flame structure of carbon monoxide/hydrogen mixtures. Note 1: Detailed kinetic modeling of syngas combustion also in presence of nitrogen compounds. International Journal of Hydrogen Energy, 2007, 32, 3471-3485.	7.1	160
14	An experimental and kinetic modeling study of n-propanol and iso-propanol combustion. Combustion and Flame, 2010, 157, 2-16.	5.2	157
15	Mathematical Modeling of Fast Biomass Pyrolysis and Bio-Oil Formation. Note I: Kinetic Mechanism of Biomass Pyrolysis. ACS Sustainable Chemistry and Engineering, 2017, 5, 2867-2881.	6.7	154
16	Skeletal mechanism reduction through species-targeted sensitivity analysis. Combustion and Flame, 2016, 163, 382-393.	5.2	150
17	Kinetic modeling of the interactions between NO and hydrocarbons at high temperature. Combustion and Flame, 2003, 135, 97-112.	5.2	141
18	Comprehensive kinetic study of combustion technologies for low environmental impact: MILD and OXY-fuel combustion of methane. Combustion and Flame, 2020, 212, 142-155.	5.2	139

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19	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
20	Kinetic and fluid dynamics modeling of methane/hydrogen jet flames in diluted coflow. Applied Thermal Engineering, 2010, 30, 376-383.	6.0	125
21	Extractives Extend the Applicability of Multistep Kinetic Scheme of Biomass Pyrolysis. Energy & Fuels, 2015, 29, 6544-6555.	5.1	118
22	Pyrolysis of Centimeter-Scale Woody Biomass Particles: Kinetic Modeling and Experimental Validation. Energy & Fuels, 2014, 28, 3884-3898.	5.1	116
23	A wide range kinetic modeling study of pyrolysis and oxidation of benzene. Combustion and Flame, 2013, 160, 1168-1190.	5.2	111
24	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
25	Improved Kinetic Model of the Low-Temperature Oxidation of n-Heptane. Energy & Fuels, 2014, 28, 7178-7193.	5.1	102
26	Lumping and Reduction of Detailed Kinetic Schemes: an Effective Coupling. Industrial & Engineering Chemistry Research, 2014, 53, 9004-9016.	3.7	102
27	Detailed kinetic modeling of the combustion of the four butanol isomers in premixed low-pressure flames. Combustion and Flame, 2012, 159, 2295-2311.	5.2	100
28	Numerical Modeling of Laminar Flames with Detailed Kinetics Based on the Operator-Splitting Method. Energy & Fuels, 2013, 27, 7730-7753.	5.1	100
29	A wide range modeling study of NOxNOx formation and nitrogen chemistry in hydrogen combustion. International Journal of Hydrogen Energy, 2006, 31, 2310-2328.	7.1	93
30	Formation of soot and nitrogen oxides in unsteady counterflow diffusion flames. Combustion and Flame, 2009, 156, 2010-2022.	5.2	80
31	Algae characterization and multistep pyrolysis mechanism. Journal of Analytical and Applied Pyrolysis, 2017, 128, 423-436.	5.5	80
32	Mathematical Modeling of Fast Biomass Pyrolysis and Bio-Oil Formation. Note II: Secondary Gas-Phase Reactions and Bio-Oil Formation. ACS Sustainable Chemistry and Engineering, 2017, 5, 2882-2896.	6.7	79
33	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
34	Determination of <mml:math altimg="si53.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" xmlns:tb="http://www.elsevier.com/xml/common/table/dtd" xmlns:sb="http://www.elsevier.com/xml/common/struct-bib/dtd" xmlns:ce="http://www.elsevier.c. Che	3.8	76
35	An experimental and kinetic modeling study of cyclopentadiene pyrolysis: First growth of polycyclic aromatic hydrocarbons. Combustion and Flame, 2014, 161, 2739-2751.	5.2	75
36	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

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37	Reduced kinetic mechanisms of diesel fuel surrogate for engine CFD simulations. Combustion and Flame, 2015, 162, 3991-4007.	5.2	73
38	Detailed kinetic mechanism of gas-phase reactions of volatiles released from biomass pyrolysis. Biomass and Bioenergy, 2016, 93, 60-71.	5.7	73
39	Kinetic Modeling Study of Polycyclic Aromatic Hydrocarbons and Soot Formation in Acetylene Pyrolysis. Energy & Fuels, 2014, 28, 1489-1501.	5.1	70
40	A predictive model of biochar formation and characterization. Journal of Analytical and Applied Pyrolysis, 2018, 134, 326-335.	5.5	69
41	Analysis of Some Reaction Pathways Active during Cyclopentadiene Pyrolysis. Journal of Physical Chemistry A, 2012, 116, 3313-3324.	2.5	67
42	Kinetic modeling study of benzene and PAH formation in laminar methane flames. Combustion and Flame, 2015, 162, 1692-1711.	5.2	67
43	A new procedure for predicting NOx emissions from furnaces. Computers and Chemical Engineering, 2001, 25, 613-618.	3.8	63
44	Detailed kinetics of substituted phenolic species in pyrolysis bio-oils. Reaction Chemistry and Engineering, 2019, 4, 490-506.	3.7	63
45	Kinetic Modeling of the Oxidation of Ethanol and Gasoline Surrogate Mixtures. Combustion Science and Technology, 2010, 182, 653-667.	2.3	62
46	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
47	Modeling soot formation in premixed flames using an Extended Conditional Quadrature Method of Moments. Combustion and Flame, 2015, 162, 2529-2543.	5.2	62
48	An experimental and kinetic modeling study of the pyrolysis and oxidation of n-C3C5 aldehydes in shock tubes. Combustion and Flame, 2015, 162, 265-286.	5.2	59
49	Resolved flow simulation of pulverized coal particle devolatilization and ignition in air- and O 2 /CO 2 -atmospheres. Fuel, 2016, 186, 285-292.	6.4	59
50	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
51	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
52	Predictive one step kinetic model of coal pyrolysis for CFD applications. Proceedings of the Combustion Institute, 2013, 34, 2401-2410.	3.9	55
53	A computational framework for the pyrolysis of anisotropic biomass particles. Chemical Engineering Journal, 2017, 321, 458-473.	12.7	55
54	Laminar flame speeds of pentanol isomers: An experimental and modeling study. Combustion and Flame, 2016, 166, 1-18.	5.2	51

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55	Kinetic modeling study of ethanol and dimethyl ether addition to premixed low-pressure propeneâ€“oxygenâ€“argon flames. Combustion and Flame, 2011, 158, 1264-1276.	5.2	50
56	Experimental and semi-detailed kinetic modeling study of decalin oxidation and pyrolysis over a wide range of conditions. Proceedings of the Combustion Institute, 2013, 34, 289-296.	3.9	50
57	An evolutionary, data-driven approach for mechanism optimization: theory and application to ammonia combustion. Combustion and Flame, 2021, 229, 111366.	5.2	50
58	Experimental and Kinetic Modeling Study of the Pyrolysis and Oxidation of Decalin. Energy & Fuels, 2009, 23, 1464-1472.	5.1	48
59	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
60	Numerical modeling of auto-ignition of isolated fuel droplets in microgravity. Proceedings of the Combustion Institute, 2015, 35, 1621-1627.	3.9	46
61	An experimental and kinetic modeling study of glycerol pyrolysis. Applied Energy, 2016, 184, 68-76.	10.1	45
62	Probe effects in soot sampling from a burner-stabilized stagnation flame. Combustion and Flame, 2016, 167, 184-197.	5.2	45
63	A wide range kinetic modeling study of pyrolysis and oxidation of methyl butanoate and methyl decanoate â€“ Note II: Lumped kinetic model of decomposition and combustion of methyl esters up to methyl decanoate. Combustion and Flame, 2012, 159, 2280-2294.	5.2	43
64	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
65	Experimental and modeling investigation of the effect of the unsaturation degree on the gas-phase oxidation of fatty acid methyl esters found in biodiesel fuels. Combustion and Flame, 2016, 164, 346-362.	5.2	42
66	Analysis of acetic acid gas phase reactivity: Rate constant estimation and kinetic simulations. Proceedings of the Combustion Institute, 2019, 37, 539-546.	3.9	42
67	High-temperature chemistry of HCl and Cl2. Combustion and Flame, 2015, 162, 2693-2704.	5.2	41
68	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
69	Fully-resolved simulations of coal particle combustion using a detailed multi-step approach for heterogeneous kinetics. Fuel, 2019, 240, 75-83.	6.4	40
70	Relative Reactivity of Oxygenated Fuels: Alcohols, Aldehydes, Ketones, and Methyl Esters. Energy & Fuels, 2016, 30, 8665-8679.	5.1	38
71	Modeling Non-Premixed Combustion Using Tabulated Kinetics and Different Fame Structure Assumptions. SAE International Journal of Engines, 0, 10, 593-607.	0.4	37
72	Multi-scale modeling of Claus thermal furnace and waste heat boiler using detailed kinetics. Computers and Chemical Engineering, 2013, 59, 219-225.	3.8	35

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73	A new predictive multi-zone model for HCCI engine combustion. Applied Energy, 2016, 178, 826-843.	10.1	35
74	Detailed Multi-dimensional Study of Pollutant Formation in a Methane Diffusion Flame. Energy & Fuels, 2012, 26, 1598-1611.	5.1	33
75	Frequency Response of Counter Flow Diffusion Flames to Strain Rate Harmonic Oscillations. Combustion Science and Technology, 2008, 180, 767-784.	2.3	32
76	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
77	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
78	Kinetic modeling of soot formation in premixed burner-stabilized stagnation ethylene flames at heavily sooting condition. Fuel, 2018, 234, 199-206.	6.4	32
79	Inhibition of hydrogen oxidation by HBr and Br2. Combustion and Flame, 2012, 159, 528-540.	5.2	31
80	Soot formation in unsteady counterflow diffusion flames. Proceedings of the Combustion Institute, 2009, 32, 1335-1342.	3.9	29
81	Alkyl radicals rule the low temperature oxidation of long chain aldehydes. Proceedings of the Combustion Institute, 2017, 36, 393-401.	3.9	28
82	Prediction of flammable range for pure fuels and mixtures using detailed kinetics. Combustion and Flame, 2019, 207, 120-133.	5.2	27
83	A first evaluation of butanoic and pentanoic acid oxidation kinetics. Chemical Engineering Journal, 2019, 373, 973-984.	12.7	27
84	Experimental Study of Tetralin Oxidation and Kinetic Modeling of Its Pyrolysis and Oxidation. Energy & Fuels, 2013, 27, 1576-1585.	5.1	24
85	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
86	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
87	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
88	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
89	An experimental and kinetic modelling study of n-C4C6 aldehydes oxidation in a jet-stirred reactor. Proceedings of the Combustion Institute, 2019, 37, 389-397.	3.9	21
90	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

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91	A Kinetic Modelling Study of Alcohols Operating Regimes in a HCCI Engine. SAE International Journal of Engines, 0, 10, 2354-2370.	0.4	20
92	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
93	Numerical investigation of soot formation from microgravity droplet combustion using heterogeneous chemistry. Combustion and Flame, 2018, 189, 393-406.	5.2	19
94	Experimental and Modeling Study of a Low NO_xCombustor for Aero-Engine Turbofan. Combustion Science and Technology, 2009, 181, 483-495.	2.3	18
95	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
96	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
97	Buoyancy effect in sooting laminar premixed ethylene flame. Combustion and Flame, 2019, 205, 135-146.	5.2	18
98	Soot Modeling of Ethylene Counterflow Diffusion Flames. Combustion Science and Technology, 2019, 191, 1473-1483.	2.3	18
99	Kinetic Modeling of Soot Formation in Turbulent Nonpremixed Flames. Environmental Engineering Science, 2008, 25, 1407-1422.	1.6	17
100	Detailed Emissions Prediction for a Turbulent Swirling Nonpremixed Flame. Energy & Fuels, 2014, 28, 1470-1488.	5.1	17
101	Concentrations of Nitric Oxide in Laminar Counterflow Methane/Air Diffusion Flames. Journal of Propulsion and Power, 2005, 21, 1019-1028.	2.2	16
102	An experimental and CFD modeling study of suspended droplets evaporation in buoyancy driven convection. Chemical Engineering Journal, 2019, 375, 122006.	12.7	16
103	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
104	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
105	Optimization of Chemical Kinetics for Methane and Biomass Pyrolysis Products in Moderate or Intense Low-Oxygen Dilution Combustion. Energy & Fuels, 2018, 32, 10194-10201.	5.1	15
106	OptiSMOKE++: A toolbox for optimization of chemical kinetic mechanisms. Computer Physics Communications, 2021, 264, 107940.	7.5	14
107	Carrier-phase DNS of detailed NOx formation in early-stage pulverized coal combustion with fuel-bound nitrogen. Fuel, 2021, 291, 119998.	6.4	13
108	Dimethyl ether oxidation analyzed in a given flow reactor: Experimental and modeling uncertainties. Combustion and Flame, 2022, 240, 111998.	5.2	13

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109	On the combustion and sooting behavior of standard and hydro-treated jet fuels: An experimental and modeling study on the compositional effects. Proceedings of the Combustion Institute, 2021, 38, 523-532.	3.9	12
110	Ignition Characteristics in Spatially Zero-, One- and Two-Dimensional Laminar Ethylene Flames. AIAA Journal, 2016, 54, 3255-3264.	2.6	11
111	Reduced Kinetic Mechanisms for Diesel Spray Combustion Simulations. , 0, , .		10
112	The influence of low-temperature chemistry on partially-premixed counterflow n-heptane/air flames. Combustion and Flame, 2018, 188, 440-452.	5.2	10
113	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
114	The solution of very large non-linear algebraic systems. Computers and Chemical Engineering, 2009, 33, 1727-1734.	3.8	8
115	Skeletal kinetic mechanism for diesel combustion. Combustion Theory and Modelling, 2017, 21, 79-92.	1.9	8
116	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
117	Interface-resolved simulation of the evaporation and combustion of a fuel droplet suspended in normal gravity. Fuel, 2021, 287, 119413.	6.4	7
118	Modeling Homogeneous Combustion in Bubbling Beds Burning Liquid Fuels. Journal of Energy Resources Technology, Transactions of the ASME, 2007, 129, 33-41.	2.3	6
119	Multistep Kinetic Model of Biomass Pyrolysis. Green Energy and Technology, 2013, , 111-139.	0.6	6
120	Modeling of Thermochemical Conversion of Biomasses. , 2019, , .		6
121	Chemical Kinetics of Asphaltene Pyrolysis. Energy & Fuels, 2021, 35, 8672-8684.	5.1	6
122	A new procedure for predicting NOx emissions from furnaces. Computer Aided Chemical Engineering, 2000, 8, 859-864.	0.5	5
123	Generalized Classes for Lower Levels of Supply Chain Management: Object-Oriented Approach. Computer Aided Chemical Engineering, 2010, 28, 139-144.	0.5	4
124	Reactor network analysis of Claus furnace with detailed kinetics. Computer Aided Chemical Engineering, 2012, 30, 1007-1012.	0.5	4
125	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
126	Autoignition of condensed hydrocarbon fuels in non-premixed flows at elevated pressures. Combustion Theory and Modelling, 2016, 20, 995-1009.	1.9	3

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127	RESILIENCE AND EMERGENCY MANAGEMENT OF ROAD TUNNELS: THE CASE STUDY OF THE SAN ROCCO AND STONIO TUNNELS IN ITALY. WIT Transactions on the Built Environment, 2021, , .	0.0	3
128	Detailed kinetics in the mathematical model of fixed bed gasifiers. Computer Aided Chemical Engineering, 2010, , 829-834.	0.5	2
129	Theoretical and kinetic modeling study of chloromethane (CH₃Cl) pyrolysis and oxidation. International Journal of Chemical Kinetics, 2021, 53, 403-418.	1.6	2
130	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
131	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
132	Modeling Homogeneous Combustion in Bubbling Beds Burning Liquid Fuels. , 2003, , .		1
133	Dynamic analysis of oscillating flames. Computer Aided Chemical Engineering, 2009, , 749-753.	0.5	0
134	Fluid Dynamics and Detailed Kinetic Modeling of Pollutant Emissions From Lean Combustion Systems. , 2010, , .		0
135	Ignition Characteristics in Spatially Zero-, One- and Two-Dimensional Laminar Ethylene Flames. , 2015, , .		0