Stelios Rigopoulos

List of Publications by Year
in descending order

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52	1,411	279701	345118
papers	citations	23 h-index	36 g-index

53	53	53	814
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Population balance modelling of polydispersed particles in reactive flows. Progress in Energy and Combustion Science, 2010, 36, 412-443.	15.8	126
2	Tabulation of combustion chemistry via Artificial Neural Networks (ANNs): Methodology and application to LES-PDF simulation of Sydney flame L. Combustion and Flame, 2017, 185, 245-260.	2.8	107
3	Finite-element scheme for solution of the dynamic population balance equation. AICHE Journal, 2003, 49, 1127-1139.	1.8	102
4	A chemistry tabulation approach via Rate-Controlled Constrained Equilibrium (RCCE) and Artificial Neural Networks (ANNs), with application to turbulent non-premixed CH4/H2/N2 flames. Proceedings of the Combustion Institute, 2013, 34, 1465-1473.	2.4	77
5	A hybrid CFDâ€"reaction engineering framework for multiphase reactor modelling: basic concept and application to bubble column reactors. Chemical Engineering Science, 2003, 58, 3077-3089.	1.9	71
6	Rate-controlled constrained equilibrium: Formulation and application to nonpremixed laminar flames. Combustion and Flame, 2005, 142, 223-234.	2.8	65
7	PDF method for population balance in turbulent reactive flow. Chemical Engineering Science, 2007, 62, 6865-6878.	1.9	47
8	An LES-PBE-PDF approach for predicting the soot particle size distribution in turbulent flames. Combustion and Flame, 2018, 189, 62-76.	2.8	44
9	Modelling of Soot Aerosol Dynamics in Turbulent Flow. Flow, Turbulence and Combustion, 2019, 103, 565-604.	1.4	39
10	Reduced chemistry for hydrogen and methanol premixed flames via RCCE. Combustion Theory and Modelling, 2007, 11, 755-780.	1.0	38
11	Rate-Controlled Constrained Equilibrium (RCCE) simulations of turbulent partially premixed flames (Sandia D/E/F) and comparison with detailed chemistry. Combustion and Flame, 2015, 162, 2256-2271.	2.8	34
12	A conservative method for numerical solution of the population balance equation, and application to soot formation. Combustion and Flame, 2019, 205, 506-521.	2.8	34
13	Modeling of Semibatch Agglomerative Gasâ"Liquid Precipitation of CaCO3 in a Bubble Column Reactor. Industrial & Engineering Chemistry Research, 2003, 42, 6567-6575.	1.8	32
14	A LOIâ€"RCCE methodology for reducing chemical kinetics, with application to laminar premixed flames. Proceedings of the Combustion Institute, 2009, 32, 569-576.	2.4	32
15	Crystallization and precipitation engineering. Computers and Chemical Engineering, 2005, 29, 1159-1166.	2.0	30
16	Machine learning tabulation of thermochemistry in turbulent combustion: An approach based on hybrid flamelet/random data and multiple multilayer perceptrons. Combustion and Flame, 2021, 231, 111493.	2.8	30
17	An explicit adaptive grid approach for the numerical solution of the population balance equation. Chemical Engineering Science, 2017, 168, 250-270.	1.9	29
18	Modeling of aerosol formation in a turbulent jet with the transported population balance equation-probability density function approach. Physics of Fluids, 2011, 23, .	1.6	27

#	Article	IF	Citations
19	Reduction of a detailed chemical mechanism for a kerosene surrogate via RCCE-CSP. Combustion and Flame, 2018, 194, 85-106.	2.8	27
20	An LES-PBE-PDF approach for modeling particle formation in turbulent reacting flows. Physics of Fluids, 2017, 29, .	1.6	26
21	Systematic development of optimal activated sludge process designs. Computers and Chemical Engineering, 2002, 26, 585-597.	2.0	25
22	Differential Diffusion Modelling in LES with RCCE-Reduced Chemistry. Flow, Turbulence and Combustion, 2012, 89, 311-328.	1.4	25
23	Modeling of turbulent flames with the large eddy simulationâ€“probability density function (LESâ€“PDF) approach, stochastic fields, and artificial neural networks. Physics of Fluids, 2021, 33, .	1.6	25
24	A methodology for derivation of RCCE-reduced mechanisms via CSP. Combustion and Flame, 2017, 183, 126-143.	2.8	25
25	Dynamic modelling of a bubble column for particle formation via a gasâ€“liquid reaction. Chemical Engineering Science, 2001, 56, 6177-6184.	1.9	24
26	Reduction of comprehensive chemistry via constraint potentials. Proceedings of the Combustion Institute, 2005, 30, 1325-1331.	2.4	22
27	On adaptively reduced chemistry in large eddy simulations. Proceedings of the Combustion Institute, 2011, 33, 1339-1346.	2.4	21
28	Large Eddy Simulation of a Turbulent Lifted Flame using Conditional Moment Closure and Rate-Controlled Constrained Equilibrium. Flow, Turbulence and Combustion, 2011, 87, 407-423.	1.4	18
29	Modelling of soot coalescence and aggregation with a two-population balance equation model and a conservative finite volume method. Combustion and Flame, 2021, 229, 111382.	2.8	18
30	A methodology for the integration of stiff chemical kinetics on GPUs. Combustion and Flame, 2015, 162, 1375-1394.	2.8	17
31	Modelling of soot formation in laminar diffusion flames using a comprehensive CFD-PBE model with detailed gas-phase chemistry. Combustion Theory and Modelling, 2017, 21, 35-48.	1.0	17
32	Population balance modelling and laser diagnostic validation of soot particle evolution in laminar ethylene diffusion flames. Combustion and Flame, 2020, 221, 384-400.	2.8	15
33	Reconstruction of largeâ€scale flow structures in a stirred tank from limited sensor data. AICHE Journal, 2021, 67, e17348.	1.8	15
34	Modeling of turbulent precipitation: A transported population balanceâ€PDF method. AICHE Journal, 2010, 56, 878-892.	1.8	13
35	Experimental and kinetic modeling study on sooting tendencies of alkylbenzene isomers. Fuel, 2021, 283, 118873.	3.4	12
36	Measurement and simulation of sooting characteristics by an ATJ-SKA biojet fuel and blends with Jet A-1 fuel in laminar non-premixed flames. Combustion and Flame, 2021, 233, 111582.	2.8	11

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37	The Rate-Controlled Constrained Equilibrium (RCCE) Method for Reducing Chemical Kinetics in Systems with Time-Scale Separation. International Journal for Multiscale Computational Engineering, 2007, 5, 11-18.	0.8	11
38	Algorithmic Aspects of the LES-PBE-PDF Method for Modeling Soot Particle Size Distributions in Turbulent Flames. Combustion Science and Technology, 2019, 191, 766-796.	1.2	10
39	Experimental and numerical study on soot formation in laminar diffusion flames of biodiesels and methyl esters. Proceedings of the Combustion Institute, 2021, 38, 1335-1344.	2.4	10
40	Effects of the electric field on soot formation in combustion: A coupled charged particle PBE-CFD framework. Combustion and Flame, 2022, 239, 111796.	2.8	10
41	Modelling of soot formation and aggregation in turbulent flows with the LES-PBE-PDF approach and a conservative sectional method. Combustion and Flame, 2022, 242, 112152.	2.8	10
42	On the interaction of turbulence with nucleation and growth in reaction crystallisation. Journal of Fluid Mechanics, 2022, 944, .	1.4	8
43	A methodology for coupling DNS and discretised population balance for modelling turbulent precipitation. International Journal of Heat and Fluid Flow, 2020, 86, 108689.	1.1	6
44	A study of turbulence-chemistry interaction in reactive precipitation via a Population Balance - transported PDF method. , 2009, , .		6
45	Analysis of turbulent coagulation in a jet with discretised population balance and DNS. Journal of Fluid Mechanics, 2022, 937, .	1.4	6
46	Modelling of laminar diffusion flames with biodiesel blends and soot formation. Fuel, 2022, 317, 122897.	3.4	5
47	Modelling of Soot Formation in a Laminar Coflow Non-premixed Flame with a Detailed CFD-Population Balance Model. Procedia Engineering, 2015, 102, 1274-1283.	1.2	3
48	Analysis of wall mass transfer in turbulent pipe flow combining extended proper orthogonal decomposition and Fukagata-Iwamoto-Kasagi identity. Physical Review Fluids, 2022, 7, .	1.0	3
49	Crystallization and precipitation engineering. Computer Aided Chemical Engineering, 2004, 18, 75-86.	0.3	1
50	Evolution of MoO3 nanobelts and nanoplatelets formation with flame synthesis. Proceedings of the Combustion Institute, 2021, 38, 1289-1297.	2.4	1
51	Reduced Flame Kinetics Via Rate-Controlled Constrained Equilibrium. Lecture Notes in Computer Science, 2006, , 18-25.	1.0	1
52	Development of novel process designs for simultaneous oxidation and denitrification of wastewaters. Computer Aided Chemical Engineering, 2001, 9, 493-498.	0.3	0