Alessandro Parente

List of Publications by Year
in descending order

136	4,051	117453	143772
papers	citations	34 h-index	57 g-index

139	139	139	1828
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Manifold-informed state vector subset for reduced-order modeling. Proceedings of the Combustion Institute, 2023, 39, 5145-5154.	2.4	12
2	Boosting the dissociation of by employing shockâ€free supersonic expansion. Plasma Processes and Polymers, 2022, 19, e2100110.	1.6	2
3	Interpretation and characterization of MILD combustion data using unsupervised clustering informed by physics-based, domain expertise. Combustion and Flame, 2022, 240, 111954.	2.8	5
4	Predicting octane numbers relying on principal component analysis and artificial neural network. Computers and Chemical Engineering, 2022, 161, 107784.	2.0	9
5	Combined effect of experimental and kinetic uncertainties on NO predictions in low-pressure premixed laminar H2/CH4/CO-air and H2/CH4/CO/C6H6-air flames. Fuel, 2022, 320, 123800.	3.4	5
6	The role of outdoor and indoor air quality in the spread of SARS-CoV-2: Overview and recommendations by the research group on COVID-19 and particulate matter (RESCOP commission). Environmental Research, 2022, 211, 113038.	3.7	42
7	The partially stirred reactor model for combustion closure in large eddy simulations: Physical principles, sub-models for the cell reacting fraction, and open challenges. Physics of Fluids, 2022, 34, .	1.6	18
8	Principal component analysis based combustion model in the context of a lifted methane/air flame: Sensitivity to the manifold parameters and subgrid closure. Combustion and Flame, 2022, 244, 112134.	2.8	12
9	Investigation of temperature correction methods for fine wire thermocouple losses in lowâ€pressure flat premixed laminar flames. Combustion and Flame, 2022, 244, 112248.	2.8	8
10	Numerical and experimental investigation of turbulent n-heptane jet-in-hot-coflow flames. Fuel, 2021, 283, 118748.	3.4	9
11	Study of MILD combustion using LES and advanced analysis tools. Proceedings of the Combustion Institute, 2021, 38, 5423-5432.	2.4	12
12	Combustion modeling using Principal Component Analysis: A posteriori validation on Sandia flames D, E and F. Proceedings of the Combustion Institute, 2021, 38, 2635-2643.	2.4	35
13	An a priori assessment of the Partially Stirred Reactor (PaSR) model for MILD combustion. Proceedings of the Combustion Institute, 2021, 38, 5403-5414.	2.4	19
14	Application of Improved CFD Modeling for Prediction and Mitigation of Traffic-Related Air Pollution Hotspots in a Realistic Urban Street. Atmospheric Environment, 2021, 246, 118127.	1.9	55
15	Application of machine learning for filtered density function closure in MILD combustion. Combustion and Flame, 2021, 225, 160-179.	2.8	30
16	Digital twin of a combustion furnace operating in flameless conditions: reduced-order model development from CFD simulations. Proceedings of the Combustion Institute, 2021, 38, 5373-5381.	2.4	34
17	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, .	1.2	2
18	Strategies for Hydrogen-Enriched Methane Flameless Combustion in a Quasi-Industrial Furnace. Frontiers in Energy Research, 2021, 8, .	1.2	20

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19	Non-Premixed Filtered Tabulated Chemistry: Filtered Flame Modeling of Diffusion Flames. Fuels, 2021, 2, 87-107.	1.3	2
20	Combination of polynomial chaos and Kriging for reduced-order model of reacting flow applications. Results in Engineering, 2021, 10, 100223.	2.2	14
21	Improving indoor air quality through an air purifier able to reduce aerosol particulate matter (PM) and volatile organic compounds (VOCs): Experimental results. Environmental Research, 2021, 197, 111131.	3.7	55
22	OptiSMOKE++: A toolbox for optimization of chemical kinetic mechanisms. Computer Physics Communications, 2021, 264, 107940.	3.0	14
23	An evolutionary, data-driven approach for mechanism optimization: theory and application to ammonia combustion. Combustion and Flame, 2021, 229, 111366.	2.8	50
24	The effect of benzene on the structure of low-pressure premixed H2/CH4/CO-air flames and related NO formation at different equivalence ratios. Combustion and Flame, 2021, 232, 111510.	2.8	8
25	How sensitive is a dynamic ammonia synthesis process? Global sensitivity analysis of a dynamic Haber-Bosch process (for flexible seasonal energy storage). Energy, 2021, 232, 121016.	4.5	25
26	Reactive structures and NOx emissions of methane/hydrogen mixtures in flameless combustion. International Journal of Hydrogen Energy, 2021, 46, 34018-34045.	3.8	45
27	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.	0.5	1
28	A Machine-Learning Framework for Plasma-Assisted Combustion Using Principal Component Analysis and Gaussian Process Regression. Space Technology Proceedings, 2021, , 379-392.	0.1	0
29	Adaptive chemistry via pre-partitioning of composition space and mechanism reduction. Combustion and Flame, 2020, 211, 68-82.	2.8	46
30	Comprehensive kinetic study of combustion technologies for low environmental impact: MILD and OXY-fuel combustion of methane. Combustion and Flame, 2020, 212, 142-155.	2.8	139
31	Generalised Eddy Dissipation Concept for MILD combustion regime at low local Reynolds and DamkÃ¶hler numbers. Part 2: Validation of the model. Fuel, 2020, 278, 117773.	3.4	10
32	A multi-fidelity framework for the estimation of the turbulent Schmidt number in the simulation of atmospheric dispersion. Building and Environment, 2020, 185, 107066.	3.0	17
33	Gray Zone Partitioning Functions and Parameterization of Turbulence Fluxes in the Convective Atmospheric Boundary Layer. Journal of Geophysical Research D: Atmospheres, 2020, 125, e2020JD033581.	1.2	9
34	PCAfold: Python software to generate, analyze and improve PCA-derived low-dimensional manifolds. SoftwareX, 2020, 12, 100630.	1.2	17
35	Generalised Eddy Dissipation Concept for MILD combustion regime at low local Reynolds and DamkÃ¶hler numbers. Part 1: Model framework development. Fuel, 2020, 278, 117743.	3.4	25
36	Evaluation of Modeling Approaches for MILD Combustion Systems With Internal Recirculation. Frontiers in Mechanical Engineering, 2020, 6, .	0.8	11

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37	Impact of the Partitioning Method on Multidimensional Adaptive-Chemistry Simulations. Energies, 2020, 13, 2567.	1.6	13
38	How can power-to-ammonia be robust? Optimization of an ammonia synthesis plant powered by a wind turbine considering operational uncertainties. Fuel, 2020, 266, 117049.	3.4	51
39	Impact of urban environment on Savonius wind turbine performance: A numerical perspective. Renewable Energy, 2020, 156, 407-422.	4.3	21
40	Heat Release Rate Markers for the Adelaide Jet in Hot Coflow Flame. Frontiers in Mechanical Engineering, 2020, 6, .	0.8	4
41	NOx Formation in MILD Combustion: Potential and Limitations of Existing Approaches in CFD. Frontiers in Mechanical Engineering, 2020, 6, .	0.8	12
42	Computational Singular Perturbation Method and Tangential Stretching Rate Analysis of Large Scale Simulations of Reactive Flows: Feature Tracking, Time Scale Characterization, and Cause/Effect Identification. Part 1, Basic Concepts. , 2020, , 43-64.		6
43	Surrogate-Assisted Modeling and Robust Optimization of a Micro Gas Turbine Plant With Carbon Capture. Journal of Engineering for Gas Turbines and Power, 2020, 142, .	0.5	10
44	On the Influence of Kinetic Uncertainties on the Accuracy of Numerical Modeling of an Industrial Flameless Furnace Fired With NH3/H2 Blends: A Numerical and Experimental Study. Frontiers in Energy Research, 2020, 8, .	1.2	18
45	Computational Singular Perturbation Method and Tangential Stretching Rate Analysis of Large Scale Simulations of Reactive Flows: Feature Tracking, Time Scale Characterization, and Cause/Effect Identification. Part 2, Analyses of Ignition Systems, Laminar and Turbulent Flames. , 2020, , 65-88.		2
46	A Review of the Numerical Investigations of Jet-In-Hot-Coflow Burner With Reactor-Based Models. Frontiers in Mechanical Engineering, 2020, 6, .	0.8	6
47	Generalisation of the eddy-dissipation concept for jet flames with low turbulence and low DamkÃ¶hler number. Proceedings of the Combustion Institute, 2019, 37, 4497-4505.	2.4	46
48	On the role of mixing models in the simulation of MILD combustion using finite-rate chemistry combustion models. Proceedings of the Combustion Institute, 2019, 37, 4531-4538.	2.4	40
49	PCA and Kriging for the efficient exploration of consistency regions in Uncertainty Quantification. Proceedings of the Combustion Institute, 2019, 37, 4461-4469.	2.4	10
50	A multiscale combustion model formulation for NO predictions in hydrogen enriched jet flames. International Journal of Hydrogen Energy, 2019, 44, 23436-23457.	3.8	30
51	Characterization of jet-in-hot-coflow flames using tangential stretching rate. Combustion and Flame, 2019, 208, 281-298.	2.8	18
52	Optimal design and operating strategy of a carbon-clean micro gas turbine for combined heat and power applications. International Journal of Greenhouse Gas Control, 2019, 88, 469-481.	2.3	8
53	Prediction of flammable range for pure fuels and mixtures using detailed kinetics. Combustion and Flame, 2019, 207, 120-133.	2.8	27
54	Buoyancy effect in sooting laminar premixed ethylene flame. Combustion and Flame, 2019, 205, 135-146.	2.8	18

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55	CFD dispersion study based on a variable Schmidt formulation for flows around different configurations of ground-mounted buildings. Building and Environment, 2019, 154, 336-347.	3.0	23
56	Is There a Future for Small-Scale Cogeneration in Europe? Economic and Policy Analysis of the Internal Combustion Engine, Micro Gas Turbine and Micro Humid Air Turbine Cycles. Energies, 2019, 12, 413.	1.6	11
57	Examination of a soot model in premixed laminar flames at fuel-rich conditions. Proceedings of the Combustion Institute, 2019, 37, 1013-1021.	2.4	109
58	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.	2.4	36
59	Application of reduced-order models based on PCA & Kriging for the development of digital twins of reacting flow applications. Computers and Chemical Engineering, 2019, 121, 422-441.	2.0	56
60	Soot Modeling of Ethylene Counterflow Diffusion Flames. Combustion Science and Technology, 2019, 191, 1473-1483.	1.2	18
61	Thermochemical oscillation of methane MILD combustion diluted with N₂/CO₂/H₂O. Combustion Science and Technology, 2019, 191, 68-80.	1.2	12
62	Turbulence model formulation and dispersion modelling for the CFD simulation of flows around obstacles and on complex terrains. Lecture Series - Van Kareman Institute for Fluid Dynamics, 2019, , .	0.0	1
63	Principal component analysis acceleration of rovibrational coarse-grain models for internal energy excitation and dissociation. Journal of Chemical Physics, 2018, 148, 164107.	1.2	4
64	Principal component analysis coupled with nonlinear regression for chemistry reduction. Combustion and Flame, 2018, 187, 30-41.	2.8	53
65	Toward Higher Micro Gas Turbine Efficiency and Flexibilityâ€"Humidified Micro Gas Turbines: A Review. Journal of Engineering for Gas Turbines and Power, 2018, 140, .	0.5	32
66	Experimental and Numerical Investigation of a
MILD Combustion Chamber for Micro Gas
Turbine Applications. Energies, 2018, 11, 3363.	1.6	15
67	Key Modeling Aspects in the Simulation of a Quasi-industrial 20 kW Moderate or Intense Low-oxygen Dilution Combustion Chamber. Energy & Fuels, 2018, 32, 10228-10241.	2.5	33
68	Prediction of the PIONA and oxygenate composition of unconventional fuels with the Pseudo-Component Property Estimation (PCPE) method. Application to an Automotive Shredder Residues-derived gasoline. , 2018, , .		3
69	Humidified Micro Gas Turbine for Carbon Capture Applications: Preliminary Experimental Results With CO2 Injection. , 2018, , .		1
70	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.	5.1	52
71	Assessment of On-the-Fly Chemistry Reduction and Tabulation Approaches for the Simulation of Moderate or Intense Low-Oxygen Dilution Combustion. Energy & Fuels, 2018, 32, 10121-10131.	2.5	20
72	Feature extraction and reduced-order modelling of nitrogen plasma models using principal component analysis. Computers and Chemical Engineering, 2018, 115, 504-514.	2.0	18

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73	Application of Bound-to-Bound Data Collaboration approach for development and uncertainty quantification of a reduced char combustion model. Fuel, 2018, 232, 769-779.	3.4	14
74	Kinetic modeling of soot formation in premixed burner-stabilized stagnation ethylene flames at heavily sooting condition. Fuel, 2018, 234, 199-206.	3.4	32
75	Validation of a reduced NO formation mechanism on a flameless furnace fed with H2-enriched low calorific value fuels. Applied Thermal Engineering, 2018, 144, 877-889.	3.0	21
76	Optimization of Chemical Kinetics for Methane and Biomass Pyrolysis Products in Moderate or Intense Low-Oxygen Dilution Combustion. Energy & Fuels, 2018, 32, 10194-10201.	2.5	15
77	Advanced turbulence models and boundary conditions for flows around different configurations of ground-mounted buildings. Journal of Wind Engineering and Industrial Aerodynamics, 2017, 167, 160-182.	1.7	30
78	Waste heat recovery optimization in micro gas turbine applications using advanced humidified gas turbine cycle concepts. Applied Energy, 2017, 207, 218-229.	5.1	48
79	Advanced Humidified Gas Turbine Cycle Concepts Applied to Micro Gas Turbine Applications for Optimal Waste Heat Recovery. Energy Procedia, 2017, 105, 1712-1718.	1.8	18
80	Collaborative simulations and experiments for a novel yield model of coal devolatilization in oxy-coal combustion conditions. Fuel Processing Technology, 2017, 166, 86-95.	3.7	8
81	Experimental characterisation of a micro Humid Air Turbine: assessment of the thermodynamic performance. Applied Thermal Engineering, 2017, 118, 796-806.	3.0	34
82	Experimental and numerical investigation of a MILD-based Stirling engine fed with landfill gas. Energy Procedia, 2017, 120, 230-237.	1.8	5
83	Collaboration of simulations and experiments for development and uncertainty quantification of a reduced char combustion model. Energy Procedia, 2017, 120, 500-507.	1.8	5
84	Analysis of a 20 kW flameless furnace fired with natural gas. Energy Procedia, 2017, 120, 104-111.	1.8	1
85	Development of a Recuperated Flameless Combustor for an Inverted Brayton Cycle Microturbine Used in Residential Micro-CHP. , 2017, , .		3
86	Towards Higher Micro Gas Turbine Efficiency and Flexibility: Humidified MGTS â€" A Review. , 2017, , .		4
87	Edcsmoke: A new combustion solver for stiff chemistry based on OpenFOAMÂ®. AIP Conference Proceedings, 2017, , .	0.3	0
88	Carbon capture on micro gas turbine cycles: Assessment of the performance on dry and wet operations. Applied Energy, 2017, 207, 243-253.	5.1	23
89	Comprehensive numerical study of the Adelaide Jet in Hot-Coflow burner by means of RANS and detailed chemistry. Energy, 2017, 139, 555-570.	4.5	65
90	Carbon Capture on a Micro Gas Turbine: Assessment of the Performance. Energy Procedia, 2017, 105, 4046-4052.	1.8	3

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91	Selection of appropriate constraints for dimension reduction in MILD combustion simulations via RCCE. Proceedings of the Combustion Institute, 2017, 36, 4287-4295.	2.4	2
92	Carbon Clean Combined Heat and Power Production from micro Gas Turbines: Thermodynamic Analysis of Different Scenarios. Energy Procedia, 2017, 142, 1622-1628.	1.8	2
93	Operational Optimization of a Typical micro Gas Turbine. Energy Procedia, 2017, 142, 1653-1660.	1.8	8
94	Finite-rate chemistry modelling of non-conventional combustion regimes. Energy Procedia, 2017, 142, 1570-1576.	1.8	2
95	Does humidification improve the micro Gas Turbine cycle? Thermodynamic assessment based on Sankey and Grassmann diagrams. Applied Energy, 2017, 204, 1163-1171.	5.1	29
96	Reduced-order kinetic plasma models using principal component analysis: Model formulation and manifold sensitivity. Physical Review Fluids, 2017, 2, .	1.0	13
97	CFD boundary conditions, turbulence models and dispersion study for flows around obstacles. Lecture Series - Van Kareman Institute for Fluid Dynamics, 2017, , .	0.0	4
98	PCA-Score Method for the Reduction of Collisional-Radiative Chemistry. , 2017, , .		0
99	Exhaust Gas Recirculation on Humidified Flexible Micro Gas Turbines for Carbon Capture Applications. , 2016, , .		11
100	Experimental Characterisation of a Humidified T100 Micro Gas Turbine. , 2016, , .		2
101	Reduction of a collisional-radiative argon model comparing a modified binning method with principal component analysis. , 2016, , .		0
102	Assessment of different chemistry reduction methods based on principal component analysis: Comparison of the MG-PCA and score-PCA approaches. Combustion and Flame, 2016, 168, 83-97.	2.8	30
103	Humidified micro gas turbines for domestic users: An economic and primary energy savings analysis. Energy, 2016, 117, 429-438.	4.5	22
104	CFD-aided benchmark assessment of coal devolatilization one-step models in oxy-coal combustion conditions. Fuel Processing Technology, 2016, 154, 27-36.	3.7	5
105	Extension of the Eddy Dissipation Concept for turbulence/chemistry interactions to MILD combustion. Fuel, 2016, 163, 98-111.	3.4	180
106	T100 mGT converted into mHAT for domestic applications: Economic analysis based on hourly demand. Applied Energy, 2016, 164, 1019-1027.	5.1	29
107	Reduction of a collisional-radiative mechanism for argon plasma based on principal component analysis. Physics of Plasmas, 2015, 22, 062108.	0.7	11
108	Advanced regression methods for combustion modelling using principal components. Combustion and Flame, 2015, 162, 2592-2601.	2.8	37

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109	Transient Simulations of a T100 Micro Gas Turbine Converted Into a Micro Humid Air Turbine. , 2015, , .		11
110	Dimension reduction of non-equilibrium plasma kinetic models using principal component analysis. Plasma Sources Science and Technology, 2015, 24, 025004.	1.3	28
111	MG-local-PCA Method for the Reduction of a Collisional-Radiative Argon Plasma Mechanism. , 2015, , .		1
112	Reduced NO formation models for CFD simulations of MILD combustion. International Journal of Hydrogen Energy, 2015, 40, 4884-4897.	3.8	34
113	Realistic boundary conditions for the simulation of atmospheric boundary layer flows using an improved kâ€“Îµ model. Journal of Wind Engineering and Industrial Aerodynamics, 2015, 144, 183-190.	1.7	16
114	Influence of modelling and scenario uncertainties on the numerical simulation of a semi-industrial flameless furnace. Applied Thermal Engineering, 2015, 76, 324-334.	3.0	23
115	Mechanisms of NO formation in MILD combustion of CH 4 /H 2 fuel blends. International Journal of Hydrogen Energy, 2014, 39, 19187-19203.	3.8	95
116	Principal Component Analysis on a LES of a Squared Ribbed Channel. Advances in Intelligent Systems and Computing, 2014, , 259-268.	0.5	1
117	Economic Analysis of a Micro Humid Air Turbine for Domestic Applications. Energy Procedia, 2014, 61, 1476-1482.	1.8	4
118	Experimental Characterization of a T100 Micro Gas Turbine Converted to Full Humid Air Operation. Energy Procedia, 2014, 61, 2083-2088.	1.8	19
119	Reduced-order PCA models for chemical reacting flows. Combustion and Flame, 2014, 161, 2785-2800.	2.8	42
120	Development of Reduced Chemistry Models for High Enthalpy and Plasma Flows. , 2014, , .		0
121	Experimental and Numerical Study of the Micromix Combustion Principle Applied for Hydrogen and Hydrogen-Rich Syngas as Fuel with Increased Energy Density for Industrial Gas Turbine Applications. Energy Procedia, 2014, 61, 1736-1739.	1.8	10
122	Principal component analysis of turbulent combustion data: Data pre-processing and manifold sensitivity. Combustion and Flame, 2013, 160, 340-350.	2.8	89
123	MG-local-PCA method for reduced order combustion modeling. Proceedings of the Combustion Institute, 2013, 34, 1117-1123.	2.4	43
124	A Novel Methodology for Chemical Time Scale Evaluation with Detailed Chemical Reaction Kinetics. Energy & Fuels, 2013, 27, 2255-2265.	2.5	77
125	RANS simulation of ABL flow over complex terrains applying an Enhanced k-Îµ model and wall function formulation: Implementation and comparison for fluent and OpenFOAM. Journal of Wind Engineering and Industrial Aerodynamics, 2012, 104-106, 360-368.	1.7	105
126	Kernel density weighted principal component analysis of combustion processes. Combustion and Flame, 2012, 159, 2844-2855.	2.8	34

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127	Experimental and numerical investigation of a micro-CHP flameless unit. Applied Energy, 2012, 89, 203-214.	5.1	34
128	A Comprehensive Modelling Approach for the Neutral Atmospheric Boundary Layer: Consistent Inflow Conditions, Wall Function and Turbulence Model. Boundary-Layer Meteorology, 2011, 140, 411-428.	1.2	71
129	Investigation of the MILD combustion regime via Principal Component Analysis. Proceedings of the Combustion Institute, 2011, 33, 3333-3341.	2.4	81
130	Improved kâ€“Îµ model and wall function formulation for the RANS simulation of ABL flows. Journal of Wind Engineering and Industrial Aerodynamics, 2011, 99, 267-278.	1.7	134
131	A simplified approach for predicting NO formation in MILD combustion of CH4â€“H2 mixtures. Proceedings of the Combustion Institute, 2011, 33, 3343-3350.	2.4	54
132	Numerical and experimental analysis of NO emissions from a lab-scale burner fed with hydrogen-enriched fuels and operating in MILD combustion. International Journal of Hydrogen Energy, 2009, 34, 8339-8351.	3.8	129
133	Combustion modeling using principal component analysis. Proceedings of the Combustion Institute, 2009, 32, 1563-1570.	2.4	121
134	Identification of low-dimensional manifolds in turbulent flames. Proceedings of the Combustion Institute, 2009, 32, 1579-1586.	2.4	87
135	Effect of the combustion model and kinetic mechanism on the MILD combustion in an industrial burner fed with hydrogen enriched fuels. International Journal of Hydrogen Energy, 2008, 33, 7553-7564.	3.8	164
136	Numerical and experimental investigation of a mild combustion burner. Combustion and Flame, 2007, 151, 649-664.	2.8	173