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	Extension of the Eddy Dissipation Concept for turbulence/chemistry interactions to MILD combustion. Fuel, 2016, 163, 98-111.	3.4	180
2	Numerical and experimental investigation of a mild combustion burner. Combustion and Flame, 2007, 151, 649-664.	2.8	173
3	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
4	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
5	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
6	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
7	Combustion modeling using principal component analysis. Proceedings of the Combustion Institute, 2009, 32, 1563-1570.	2.4	121
8	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
9	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
10	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
11	Principal component analysis of turbulent combustion data: Data pre-processing and manifold sensitivity. Combustion and Flame, 2013, 160, 340-350.	2.8	89
12	Identification of low-dimensional manifolds in turbulent flames. Proceedings of the Combustion Institute, 2009, 32, 1579-1586.	2.4	87
13	Investigation of the MILD combustion regime via Principal Component Analysis. Proceedings of the Combustion Institute, 2011, 33, 3333-3341.	2.4	81
14	A Novel Methodology for Chemical Time Scale Evaluation with Detailed Chemical Reaction Kinetics. Energy & Fuels, 2013, 27, 2255-2265.	2.5	77
15	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
16	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
17	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
18	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

#	Article	IF	Citations
19	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
20	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
21	Principal component analysis coupled with nonlinear regression for chemistry reduction. Combustion and Flame, 2018, 187, 30-41.	2.8	53
22	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
23	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
24	An evolutionary, data-driven approach for mechanism optimization: theory and application to ammonia combustion. Combustion and Flame, 2021, 229, 111366.	2.8	50
25	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
26	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
27	Adaptive chemistry via pre-partitioning of composition space and mechanism reduction. Combustion and Flame, 2020, 211, 68-82.	2.8	46
28	Reactive structures and NOx emissions of methane/hydrogen mixtures in flameless combustion. International Journal of Hydrogen Energy, 2021, 46, 34018-34045.	3.8	45
29	MG-local-PCA method for reduced order combustion modeling. Proceedings of the Combustion Institute, 2013, 34, 1117-1123.	2.4	43
30	Reduced-order PCA models for chemical reacting flows. Combustion and Flame, 2014, 161, 2785-2800.	2.8	42
31	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
32	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
33	Advanced regression methods for combustion modelling using principal components. Combustion and Flame, 2015, 162, 2592-2601.	2.8	37
34	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
35	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
36	Kernel density weighted principal component analysis of combustion processes. Combustion and Flame, 2012, 159, 2844-2855.	2.8	34

#	Article	IF	Citations
37	Experimental and numerical investigation of a micro-CHP flameless unit. Applied Energy, 2012, 89, 203-214.	5.1	34
38	Reduced NO formation models for CFD simulations of MILD combustion. International Journal of Hydrogen Energy, 2015, 40, 4884-4897.	3.8	34
39	Experimental characterisation of a micro Humid Air Turbine: assessment of the thermodynamic performance. Applied Thermal Engineering, 2017, 118, 796-806.	3.0	34
40	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
41	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
42	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
43	Kinetic modeling of soot formation in premixed burner-stabilized stagnation ethylene flames at heavily sooting condition. Fuel, 2018, 234, 199-206.	3.4	32
44	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
45	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
46	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
47	Application of machine learning for filtered density function closure in MILD combustion. Combustion and Flame, 2021, 225, 160-179.	2.8	30
48	T100 mGT converted into mHAT for domestic applications: Economic analysis based on hourly demand. Applied Energy, 2016, 164, 1019-1027.	5.1	29
49	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
50	Dimension reduction of non-equilibrium plasma kinetic models using principal component analysis. Plasma Sources Science and Technology, 2015, 24, 025004.	1.3	28
51	Prediction of flammable range for pure fuels and mixtures using detailed kinetics. Combustion and Flame, 2019, 207, 120-133.	2.8	27
52	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
53	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
54	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

#	Article	IF	Citations
55	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
56	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
57	Humidified micro gas turbines for domestic users: An economic and primary energy savings analysis. Energy, 2016, 117, 429-438.	4.5	22
58	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
59	Impact of urban environment on Savonius wind turbine performance: A numerical perspective. Renewable Energy, 2020, 156, 407-422.	4.3	21
60	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
61	Strategies for Hydrogen-Enriched Methane Flameless Combustion in a Quasi-Industrial Furnace. Frontiers in Energy Research, 2021, 8, .	1.2	20
62	Experimental Characterization of a T100 Micro Gas Turbine Converted to Full Humid Air Operation. Energy Procedia, 2014, 61, 2083-2088.	1.8	19
63	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
64	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
65	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
66	Characterization of jet-in-hot-coflow flames using tangential stretching rate. Combustion and Flame, 2019, 208, 281-298.	2.8	18
67	Buoyancy effect in sooting laminar premixed ethylene flame. Combustion and Flame, 2019, 205, 135-146.	2.8	18
68	Soot Modeling of Ethylene Counterflow Diffusion Flames. Combustion Science and Technology, 2019, 191, 1473-1483.	1.2	18
69	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
70	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
71	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
72	PCAfold: Python software to generate, analyze and improve PCA-derived low-dimensional manifolds. SoftwareX, 2020, 12, 100630.	1.2	17

#	Article	IF	Citations
73	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
74	Experimental and Numerical Investigation of a
MILD Combustion Chamber for Micro Gas
Turbine Applications. Energies, 2018, 11, 3363.	1.6	15
75	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
76	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
77	Combination of polynomial chaos and Kriging for reduced-order model of reacting flow applications. Results in Engineering, 2021, 10, 100223.	2.2	14
78	OptiSMOKE++: A toolbox for optimization of chemical kinetic mechanisms. Computer Physics Communications, 2021, 264, 107940.	3.0	14
79	Impact of the Partitioning Method on Multidimensional Adaptive-Chemistry Simulations. Energies, 2020, 13, 2567.	1.6	13
80	Reduced-order kinetic plasma models using principal component analysis: Model formulation and manifold sensitivity. Physical Review Fluids, 2017, 2, .	1.0	13
81	Thermochemical oscillation of methane MILD combustion diluted with N₂/CO₂/H₂O. Combustion Science and Technology, 2019, 191, 68-80.	1.2	12
82	NOx Formation in MILD Combustion: Potential and Limitations of Existing Approaches in CFD. Frontiers in Mechanical Engineering, 2020, 6, .	0.8	12
83	Study of MILD combustion using LES and advanced analysis tools. Proceedings of the Combustion Institute, 2021, 38, 5423-5432.	2.4	12
84	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
85	Manifold-informed state vector subset for reduced-order modeling. Proceedings of the Combustion Institute, 2023, 39, 5145-5154.	2.4	12
86	Reduction of a collisional-radiative mechanism for argon plasma based on principal component analysis. Physics of Plasmas, 2015, 22, 062108.	0.7	11
87	Transient Simulations of a T100 Micro Gas Turbine Converted Into a Micro Humid Air Turbine. , 2015, , .		11
88	Exhaust Gas Recirculation on Humidified Flexible Micro Gas Turbines for Carbon Capture Applications. , 2016, , .		11
89	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
90	Evaluation of Modeling Approaches for MILD Combustion Systems With Internal Recirculation. Frontiers in Mechanical Engineering, 2020, 6, .	0.8	11

#	Article	IF	Citations
91	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
92	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
93	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
94	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
95	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
96	Numerical and experimental investigation of turbulent n-heptane jet-in-hot-coflow flames. Fuel, 2021, 283, 118748.	3.4	9
97	Predicting octane numbers relying on principal component analysis and artificial neural network. Computers and Chemical Engineering, 2022, 161, 107784.	2.0	9
98	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
99	Operational Optimization of a Typical micro Gas Turbine. Energy Procedia, 2017, 142, 1653-1660.	1.8	8
100	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
101	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
102	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
103	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
104	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
105	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
106	Experimental and numerical investigation of a MILD-based Stirling engine fed with landfill gas. Energy Procedia, 2017, 120, 230-237.	1.8	5
107	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
108	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

#	Article	IF	Citations
109	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
110	Economic Analysis of a Micro Humid Air Turbine for Domestic Applications. Energy Procedia, 2014, 61, 1476-1482.	1.8	4
111	Towards Higher Micro Gas Turbine Efficiency and Flexibility: Humidified MGTS â€" A Review. , 2017, , .		4
112	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
113	Heat Release Rate Markers for the Adelaide Jet in Hot Coflow Flame. Frontiers in Mechanical Engineering, 2020, 6, .	0.8	4
114	CFD boundary conditions, turbulence models and dispersion study for flows around obstacles. Lecture Series - Van Kareman Institute for Fluid Dynamics, 2017, , .	0.0	4
115	Development of a Recuperated Flameless Combustor for an Inverted Brayton Cycle Microturbine Used in Residential Micro-CHP. , 2017, , .		3
116	Carbon Capture on a Micro Gas Turbine: Assessment of the Performance. Energy Procedia, 2017, 105, 4046-4052.	1.8	3
117	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
118	Experimental Characterisation of a Humidified T100 Micro Gas Turbine. , 2016, , .		2
119	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
120	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
121	Finite-rate chemistry modelling of non-conventional combustion regimes. Energy Procedia, 2017, 142, 1570-1576.	1.8	2
122	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
123	Non-Premixed Filtered Tabulated Chemistry: Filtered Flame Modeling of Diffusion Flames. Fuels, 2021, 2, 87-107.	1.3	2
124	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
125	Boosting the dissociation of by employing shockâ€free supersonic expansion. Plasma Processes and Polymers, 2022, 19, e2100110.	1.6	2
126	Principal Component Analysis on a LES of a Squared Ribbed Channel. Advances in Intelligent Systems and Computing, 2014, , 259-268.	0.5	1

#	Article	IF	Citations
127	MG-local-PCA Method for the Reduction of a Collisional-Radiative Argon Plasma Mechanism. , 2015, , .		1
128	Analysis of a 20 kW flameless furnace fired with natural gas. Energy Procedia, 2017, 120, 104-111.	1.8	1
129	Humidified Micro Gas Turbine for Carbon Capture Applications: Preliminary Experimental Results With CO2 Injection. , 2018, , .		1
130	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
131	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
132	Development of Reduced Chemistry Models for High Enthalpy and Plasma Flows. , 2014, , .		0
133	Reduction of a collisional-radiative argon model comparing a modified binning method with principal component analysis. , 2016, , .		0
134	Edcsmoke: A new combustion solver for stiff chemistry based on OpenFOAMÂ®. AIP Conference Proceedings, 2017, , .	0.3	0
135	PCA-Score Method for the Reduction of Collisional-Radiative Chemistry. , 2017, , .		0
136	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