

# Mahdi Shahbakhti

## List of Publications by Year in descending order

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79  
papers

1,421  
citations

471509

17  
h-index

434195

31  
g-index

80  
all docs

80  
docs citations

80  
times ranked

1003  
citing authors

#	ARTICLE	IF	CITATIONS
1	Building-to-grid optimal control of integrated MicroCSP and building HVAC system for optimal demand response services. Optimal Control Applications and Methods, 2023, 44, 866-884.	2.1	2
2	Modeling, diagnostics, optimization, and control of internal combustion engines via modern machine learning techniques: A review and future directions. Progress in Energy and Combustion Science, 2022, 88, 100967.	31.2	99
3	A real-time control-oriented discrete nonlinear model development for in-cylinder air charge, residual gas and temperature prediction of a Gasoline Direct Injection engine using cylinder, intake and exhaust pressures. Control Engineering Practice, 2022, 119, 104978.	5.5	2
4	Cold Climate Impact on Air-Pollution-Related Health Outcomes: A Scoping Review. International Journal of Environmental Research and Public Health, 2022, 19, 1473.	2.6	7
5	Real-Time Estimation of Backlash Size in Automotive Drivetrains. IEEE/ASME Transactions on Mechatronics, 2022, 27, 3362-3372.	5.8	2
6	Experimental Studies of Low-Load Limit in a Stoichiometric Micro-Pilot Diesel Natural Gas Engine. Energies, 2022, 15, 728.	3.1	3
7	Epistemic Uncertainty Quantification in State-Space LPV Model Identification Using Bayesian Neural Networks. , 2021, 5, 719-724.		16
8	Reactivity controlled compression ignition engine: Pathways towards commercial viability. Applied Energy, 2021, 282, 116174.	10.1	43
9	Integration and Optimal Control of MicroCSP with Building HVAC Systems: Review and Future Directions. Energies, 2021, 14, 730.	3.1	6
10	Model Predictive Control of Internal Combustion Engines: A Review and Future Directions. Energies, 2021, 14, 6251.	3.1	36
11	Hybrid Machine Learning Approaches and a Systematic Model Selection Process for Predicting Soot Emissions in Compression Ignition Engines. Energies, 2021, 14, 7865.	3.1	14
12	Soot Emission Modeling of a Compression Ignition Engine Using Machine Learning. IFAC-PapersOnLine, 2021, 54, 826-833.	0.9	14
13	Drivetrain clunk control via a reference governor. IFAC-PapersOnLine, 2021, 54, 846-851.	0.9	4
14	Data-Driven Modeling and Control of Cyclic Variability of an Engine Operating in Low Temperature Combustion Modes. IFAC-PapersOnLine, 2021, 54, 834-839.	0.9	6
15	Development of a Kalman filter estimator for simulation and control of particulate matter distribution of a diesel catalyzed particulate filter. International Journal of Engine Research, 2020, 21, 866-884.	2.3	11
16	An experimental investigation on combustion and performance characteristics of supercharged HCCI operation in low compression ratio engine setting. Applied Thermal Engineering, 2020, 180, 115858.	6.0	23
17	Data-driven Modeling and Predictive Control of Maximum Pressure Rise Rate in RCCI Engines. , 2020, , .		11
18	Connected Vehicle Based Distributed Meta-Learning for Online Adaptive Engine/Powertrain Fuel Consumption Modeling. IEEE Transactions on Vehicular Technology, 2020, 69, 9553-9565.	6.3	8

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19	Identification of State-space Linear Parameter-varying Models Using Artificial Neural Networks. IFAC-PapersOnLine, 2020, 53, 5286-5291.	0.9	10
20	Model-Based Dynamic In-Cylinder Air Charge, Residual Gas and Temperature Estimation for a GDI Spark Ignition Engine Using Cylinder, Intake and Exhaust Pressures. , 2020, , .		5
21	An Online Transfer Learning Approach for Identification and Predictive Control Design With Application to RCCI Engines. , 2020, , .		10
22	Model-based predictive control for optimal MicroCSP operation integrated with building HVAC systems. Energy Conversion and Management, 2019, 199, 111924.	9.2	38
23	Development of a 2D Model of a SCR Catalyst on a DPF. Emission Control Science and Technology, 2019, 5, 133-171.	1.5	5
24	Experimental investigation into effects of high reactive fuel on combustion and emission characteristics of the Diesel - Natural gas Reactivity Controlled Compression Ignition engine. Applied Energy, 2019, 239, 948-956.	10.1	21
25	Optimal Exergy-wise Predictive Control for a Combined MicroCSP and HVAC System in a Building. , 2019, , .		1
26	MPC-trained ANFIS for Control of MicroCSP Integrated into a Building HVAC System. , 2019, , .		4
27	Model Predictive Control of Micro-CSP Integrated Into a Building HVAC System for Load Following Demand Response Programs. , 2019, , .		3
28	Bilevel Optimization Framework for Smart Building-to-Grid Systems. IEEE Transactions on Smart Grid, 2018, 9, 582-593.	9.0	75
29	Optimization of performance and operational cost for a dual mode diesel-natural gas RCCI and diesel combustion engine. Applied Energy, 2018, 231, 549-561.	10.1	46
30	Optimal Map-Based Mode Selection and Powertrain Control for a Multi-Mode Plug-in Hybrid Electric Vehicle. , 2018, , .		7
31	Adaptive Discrete Second-Order Sliding Mode Control With Application to Nonlinear Automotive Systems. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2018, 140, , .	1.6	10
32	Model Predictive Control of an RCCI Engine. , 2018, , .		10
33	Predictive Second Order Sliding Control of Constrained Linear Systems with Application to Automotive Control Systems. , 2018, , .		1
34	Modeling and controller design architecture for cycle-by-cycle combustion control of homogeneous charge compression ignition (HCCI) engines – A comprehensive review. Energy Conversion and Management, 2017, 139, 1-19.	9.2	78
35	Real-time modeling of ringing in HCCI engines using artificial neural networks. Energy, 2017, 125, 509-518.	8.8	36
36	Predicting Pressure Drop, Temperature, and Particulate Matter Distribution of a Catalyzed Diesel Particulate Filter Using a Multi-Zone Model Including Cake Permeability. Emission Control Science and Technology, 2017, 3, 171-201.	1.5	9

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37	Discrete adaptive second order sliding mode controller design with application to automotive control systems with model uncertainties. , 2017, , .		10
38	Enabling Demand Response programs via Predictive Control of Building-to-Grid systems integrated with PV Panels and Energy Storage Systems. , 2017, , .		10
39	Modeling, design and implementation of a closed-loop combustion controller for an RCCI engine. , 2017, , .		16
40	Robust Model-Based Discrete Sliding Mode Control of an Automotive Electronic Throttle Body. SAE International Journal of Commercial Vehicles, 2017, 10, 317-330.	0.4	2
41	Connected Vehicles and Powertrain Optimization. Mechanical Engineering, 2017, 139, S12-S18.	0.1	7
42	Energy Optimization and Fuel Economy Investigation of a Series Hybrid Electric Vehicle Integrated with Diesel/RCCI Engines. Energies, 2016, 9, 1020.	3.1	35
43	Identification of ringing operation for low temperature combustion engines. Applied Energy, 2016, 171, 142-152.	10.1	23
44	Discrete sliding controller design with robustness to implementation imprecisions via online uncertainty prediction. , 2016, , .		7
45	Novel Exergy-wise predictive control of Internal Combustion Engines. , 2016, , .		4
46	Modeling of combustion phasing of a reactivity-controlled compression ignition engine for control applications. International Journal of Engine Research, 2016, 17, 421-435.	2.3	49
47	Experimental and Simulation Analysis of Temperature and Particulate Matter Distribution for a Catalyzed Diesel Particulate Filter. Emission Control Science and Technology, 2015, 1, 255-283.	1.5	7
48	Development of a Catalyzed Diesel Particulate Filter Multi-zone Model for Simulation of Axial and Radial Substrate Temperature and Particulate Matter Distribution. Emission Control Science and Technology, 2015, 1, 183-202.	1.5	8
49	Integrated cycle-to-cycle control of exhaust gas temperature, load, and combustion phasing in an HCCI engine. , 2015, , .		5
50	Exergy-based model predictive control for building HVAC systems. , 2015, , .		11
51	Bidirectional optimal operation of smart building-to-grid systems. , 2015, , .		10
52	Performance prediction of HCCI engines with oxygenated fuels using artificial neural networks. Applied Energy, 2015, 138, 460-473.	10.1	139
53	Thermo-kinetic modelling of variable valve timing effects on HCCI engine combustion. International Journal of Automotive Engineering and Technologies, 2015, 4, 54.	0.5	4
54	Real-Time Hybrid Switching Control of Automotive Cold Start Hydrocarbon Emission. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2014, 136, .	1.6	12

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55	Grey-box modeling and control of HCCI engine emissions. , 2014, , .		9
56	Experimental and simulation study of in-cylinder strategies for regeneration of lean nitrogen oxide traps in a high-speed direct-injection diesel engine. Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering, 2013, 227, 1661-1673.	1.9	1
57	Analysis and modeling of exhaust gas temperature in an ethanol fuelled HCCI engine. Journal of Mechanical Science and Technology, 2013, 27, 3531-3539.	1.5	14
58	Understanding and detecting misfire in an HCCI engine fuelled with ethanol. Applied Energy, 2013, 108, 24-33.	10.1	77
59	Misfiring cycle pressure measurement for diesel-converted HCCI engine. , 2013, , .		3
60	Hybrid switching control of automotive cold start hydrocarbon emission. , 2013, , .		6
61	Incorporation of implementation imprecision in automotive control design. , 2013, , .		12
62	Two-Input Two-Output Control of Blended Fuel HCCI Engines. , 2013, , .		20
63	Early model-based verification of automotive control system implementation. , 2012, , .		23
64	Grey-box modeling architectures for rotational dynamic control in automotive engines. , 2012, , .		6
65	Modeling Ranges of Cyclic Variability for HCCI Ignition Timing Control. , 2011, , .		8
66	HCCI Engine Combustion Phasing Prediction Using a Symbolic-Statistics Approach. Journal of Engineering for Gas Turbines and Power, 2010, 132, .	1.1	18
67	Physics Based Control Oriented Model for HCCI Combustion Timing. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2010, 132, .	1.6	36
68	Dynamic Modeling of HCCI Combustion Timing in Transient Fueling Operation. SAE International Journal of Engines, 2009, 2, 1098-1113.	0.4	13
69	Look-forward longitudinal dynamic modelling for a series-parallel hybrid electric vehicle. International Journal of Electric and Hybrid Vehicles, 2008, 1, 342.	0.3	4
70	Control Oriented Modeling of Combustion Phasing for an HCCI Engine. Proceedings of the American Control Conference, 2007, , .	0.0	16
71	A SKELETAL KINETIC MECHANISM FOR PRF COMBUSTION IN HCCI ENGINES. Combustion Science and Technology, 2007, 179, 1059-1083.	2.3	43
72	Model-Based Control of Combustion Phasing in an HCCI Engine. SAE International Journal of Engines, 0, 5, 1163-1176.	0.4	24

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73	A Novel Singular Perturbation Technique for Model-Based Control of Cold Start Hydrocarbon Emission. SAE International Journal of Engines, 0, 7, 1290-1301.	0.4	20
74	Investigation of Impacts of Spark Plug Orientation on Early Flame Development and Combustion in a DI Optical Engine. SAE International Journal of Engines, 0, 10, 995-1010.	0.4	9
75	Analysis and Control of a Torque Blended Hybrid Electric Powertrain with a Multi-Mode LTC-SI Engine. SAE International Journal of Alternative Powertrains, 0, 6, 54-67.	0.8	14
76	Hybrid Physical and Machine Learning-Oriented Modeling Approach to Predict Emissions in a Diesel Compression Ignition Engine. , 0, , .		8
77	Model predictive control of a dual fuel engine integrated with waste heat recovery used for electric power in buildings. Optimal Control Applications and Methods, 0, , .	2.1	0
78	Multi-Variable Sensitivity Analysis and Ranking of Control Factors Impact in a Stoichiometric Micro-Pilot Natural Gas Engine at Medium Loads. , 0, , .		2
79	Development of a medium-duty stoichiometric diesel micro-pilot natural gas engine. International Journal of Engine Research, 0, , 146808742210879.	2.3	0