

Mattias Richter

List of Publications by Year in descending order

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97
papers

3,294
citations

218677

26
h-index

189892

50
g-index

97
all docs

97
docs citations

97
times ranked

1959
citing authors

#	ARTICLE	IF	CITATIONS
1	IJER editorial: The future of the internal combustion engine. International Journal of Engine Research, 2020, 21, 3-10.	2.3	457
2	Thermographic phosphors for thermometry: A survey of combustion applications. Progress in Energy and Combustion Science, 2011, 37, 422-461.	31.2	245
3	Exhaled respiratory particles during singing and talking. Aerosol Science and Technology, 2020, 54, 1245-1248.	3.1	170
4	Application of structured illumination for multiple scattering suppression in planar laser imaging of dense sprays. Optics Express, 2008, 16, 17870.	3.4	148
5	Visualization and understanding of combustion processes using spatially and temporally resolved laser diagnostic techniques. Proceedings of the Combustion Institute, 2011, 33, 69-97.	3.9	133
6	The HCCI Combustion Process in a Single Cycle - Speed Fuel Tracer LIF and Chemiluminescence Imaging. , 0, , .		102
7	The Influence of Charge Inhomogeneity on the HCCI Combustion Process. , 0, , .		96
8	Three-dimensional laser induced fluorescence of fuel distributions in an HCCI engine. Proceedings of the Combustion Institute, 2002, 29, 679-685.	3.9	92
9	Simultaneous PIV/OH-PLIF, Rayleigh thermometry/OH-PLIF and stereo PIV measurements in a low-swirl flame. Applied Optics, 2007, 46, 3928.	2.1	92
10	Simultaneous visualization of OH, CH, CH ₂ O and toluene PLIF in a methane jet flame with varying degrees of turbulence. Proceedings of the Combustion Institute, 2013, 34, 1475-1482.	3.9	72
11	Thin reaction zone and distributed reaction zone regimes in turbulent premixed methane/air flames: Scalar distributions and correlations. Combustion and Flame, 2017, 175, 220-236.	5.2	72
12	Chemiluminescence sensor for local equivalence ratio of reacting mixtures of fuel and air (FLAMESEEK). Applied Thermal Engineering, 2004, 24, 1619-1632.	6.0	69
13	Application of a high-repetition-rate laser diagnostic system for single-cycle-resolved imaging in internal combustion engines. Applied Optics, 2002, 41, 5002.	2.1	68
14	Analysis of multiple scattering suppression using structured laser illumination planar imaging in scattering and fluorescing media. Optics Express, 2011, 19, 13647.	3.4	55
15	High-speed structured planar laser illumination for contrast improvement of two-phase flow images. Optics Letters, 2008, 33, 2752.	3.3	54
16	Investigations of blue emitting phosphors for thermometry. Measurement Science and Technology, 2008, 19, 125304.	2.6	51
17	Time-resolved (kHz) 3D imaging of OH PLIF in a flame. Experiments in Fluids, 2014, 55, 1.	2.4	48
18	Two-dimensional thermometry using temperature-induced line shifts of ZnO:Zn and ZnO:Ga fluorescence. Optics Letters, 2008, 33, 1327.	3.3	46

#	ARTICLE	IF	CITATIONS
19	Experimental and numerical study on bluff-body and swirl stabilized diffusion flames. <i>Fuel</i> , 2018, 217, 352-364.	6.4	43
20	Thickness dependent variations in surface phosphor thermometry during transient combustion in an HCCI engine. <i>Combustion and Flame</i> , 2013, 160, 1466-1475.	5.2	40
21	Investigation of potential laser-induced heating effects when using thermographic phosphors for gas-phase thermometry. <i>Applied Physics B: Lasers and Optics</i> , 2009, 96, 237-240.	2.2	39
22	Ultra-high-speed PLIF imaging for simultaneous visualization of multiple species in turbulent flames. <i>Optics Express</i> , 2017, 25, 30214.	3.4	39
23	Analysis of the Correlation Between Engine-Out Particulates and Local \hat{I} in the Lift-Off Region of a Heavy Duty Diesel Engine Using Raman Spectroscopy. <i>SAE International Journal of Fuels and Lubricants</i> , 0, 2, 645-660.	0.2	37
24	Laser-Induced Phosphorescence and the Impact of Phosphor Coating Thickness on Crank-Angle Resolved Cylinder Wall Temperatures. <i>SAE International Journal of Engines</i> , 0, 4, 1689-1698.	0.4	35
25	Multi-species PLIF study of the structures of turbulent premixed methane/air jet flames in the flamelet and thin-reaction zones regimes. <i>Combustion and Flame</i> , 2017, 182, 324-338.	5.2	35
26	Instantaneous 3D imaging of flame species using coded laser illumination. <i>Proceedings of the Combustion Institute</i> , 2017, 36, 4585-4591.	3.9	35
27	Time resolved, 3D imaging (4D) of two phase flow at a repetition rate of 1 kHz. <i>Optics Express</i> , 2011, 19, 21508.	3.4	34
28	Survivability of thermographic phosphors (YAG:Dy) in a combustion environment. <i>Measurement Science and Technology</i> , 2010, 21, 037002.	2.6	33
29	NANOSECOND STRUCTURED LASER ILLUMINATION PLANAR IMAGING FOR SINGLE-SHOT IMAGING OF DENSE SPRAYS. <i>Atomization and Sprays</i> , 2010, 20, 337-343.	0.8	32
30	Ultra-high-speed pumping of an optical parametric oscillator (OPO) for high-speed laser-induced fluorescence measurements. <i>Measurement Science and Technology</i> , 2009, 20, 025306.	2.6	29
31	Application of Two-Photon Laser-Induced Fluorescence for Single-Shot Visualization of Carbon Monoxide in a Spark Ignited Engine. <i>Applied Spectroscopy</i> , 2007, 61, 1-5.	2.2	28
32	High efficient internal combustion engine using partially premixed combustion with multiple injections. <i>Applied Energy</i> , 2019, 233-234, 516-523.	10.1	28
33	Three-dimensional measurement of the local extinction coefficient in a dense spray. <i>Measurement Science and Technology</i> , 2011, 22, 125303.	2.6	27
34	Simultaneous 360° kHz PLIF/chemiluminescence imaging of fuel, CH ₂ O and combustion in a PPC engine. <i>Proceedings of the Combustion Institute</i> , 2019, 37, 4751-4758.	3.9	27
35	Heat Loss Analysis of a Steel Piston and a YSZ Coated Piston in a Heavy-Duty Diesel Engine Using Phosphor Thermometry Measurements. <i>SAE International Journal of Engines</i> , 0, 10, 1954-1968.	0.4	26
36	Study of Fuel Stratification on Spark Assisted Compression Ignition (SACI) Combustion with Ethanol Using High Speed Fuel PLIF. , 0, , .		25

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37	Stereoscopic high-speed imaging of iron microexplosions and nanoparticle-release. Optics Express, 2021, 29, 34465.	3.4	25
38	Investigation of OH and CH ₂ O distributions at ultra-high repetition rates by planar laser induced fluorescence imaging in highly turbulent jet flames. Fuel, 2018, 234, 1528-1540.	6.4	24
39	Development of high temporally and spatially (three-dimensional) resolved formaldehyde measurements in combustion environments. Review of Scientific Instruments, 2006, 77, 013104.	1.3	23
40	Investigation and compensation of the nonlinear response in photomultiplier tubes for quantitative single-shot measurements. Review of Scientific Instruments, 2012, 83, 034901.	1.3	23
41	Studies of the Combustion Process with Simultaneous Formaldehyde and OH PLIF in a Direct-Injected HCCI Engine. JSME International Journal Series B, 2005, 48, 701-707.	0.3	22
42	Picosecond excitation for reduction of photolytic effects in two-photon laser-induced fluorescence of CO. Proceedings of the Combustion Institute, 2013, 34, 3541-3548.	3.9	22
43	Simultaneous multispectral imaging of flame species using Frequency Recognition Algorithm for Multiple Exposures (FRAME). Combustion and Flame, 2018, 192, 160-169.	5.2	22
44	Analysis of EGR Effects on the Soot Distribution in a Heavy Duty Diesel Engine using Time-Resolved Laser Induced Incandescence. SAE International Journal of Engines, 0, 3, 137-155.	0.4	21
45	Comparison of Three Schemes of Two-Photon Laser-Induced Fluorescence for CO Detection in Flames. Applied Spectroscopy, 2013, 67, 314-320.	2.2	21
46	Laser-Induced Phosphorescence for Surface Thermometry in the Afterburner of an Aircraft Engine. AIAA Journal, 2007, 45, 2966-2971.	2.6	20
47	Limitations of ICCD detectors and optimized 2D phosphor thermometry. Measurement Science and Technology, 2012, 23, 035201.	2.6	20
48	Development of an automatic routine for calibration of thermographic phosphors. Measurement Science and Technology, 2014, 25, 025201.	2.6	19
49	Effects of Injection Strategies on Fluid Flow and Turbulence in Partially Premixed Combustion (PPC) in a Light Duty Engine. , 0, , .		19
50	Challenges for In-Cylinder High-Speed Two-Dimensional Laser-Induced Incandescence Measurements of Soot. SAE International Journal of Engines, 0, 4, 1607-1622.	0.4	18
51	Transition from HCCI to PPC: Investigation of Fuel Distribution by Planar Laser Induced Fluorescence (PLIF). SAE International Journal of Engines, 0, 10, 1465-1481.	0.4	18
52	Temporal temperature measurement on burning biomass pellets using phosphor thermometry and two-line atomic fluorescence. Proceedings of the Combustion Institute, 2021, 38, 3929-3938.	3.9	17
53	Cycle Resolved Wall Temperature Measurements Using Laser-Induced Phosphorescence in an HCCI Engine. , 2005, , .		16
54	Spatially resolved, single-ended two-dimensional visualization of gas flow phenomena using structured illumination. Applied Optics, 2008, 47, 3927.	2.1	16

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55	Optical study on combustion transition from HCCI to PPC with gasoline compression ignition in a HD engine. , 0, , .		16
56	Remote temperature sensing on and beneath atmospheric plasma sprayed thermal barrier coatings using thermographic phosphors. Surface and Coatings Technology, 2016, 302, 359-367.	4.8	14
57	Comparison of photo detectors and operating conditions for decay time determination in phosphor thermometry. Review of Scientific Instruments, 2012, 83, 094901.	1.3	13
58	Study of the Early Flame Development in a Spark-Ignited Lean Burn Four-Stroke Large Bore Gas Engine by Fuel Tracer PLIF. SAE International Journal of Engines, 0, 7, 928-936.	0.4	13
59	Simultaneous Burst Imaging of Dual Species Using Planar Laser-Induced Fluorescence at 50â€‰kHz in Turbulent Premixed Flames. Applied Spectroscopy, 2017, 71, 1363-1367.	2.2	13
60	Optical Diagnostics for Characterization of a Full-Size Fighter-Jet Afterburner. , 2005, , 813.		12
61	High-Speed PLIF Imaging for Investigation of Turbulence Effects on Heat Release Rates in HCCI Combustion. , 0, , .		12
62	Air-Entrainment in Wall-Jets Using SLIPI in a Heavy-Duty Diesel Engine. SAE International Journal of Engines, 0, 5, 1684-1692.	0.4	11
63	Influence of spatial and temporal distribution of Turbulent Kinetic Energy on heat transfer coefficient in a light duty CI engine operating with Partially Premixed Combustion. Applied Thermal Engineering, 2018, 129, 31-40.	6.0	11
64	High-Speed Particle Image Velocimetry Measurement of Partially Premixed Combustion (PPC) in a Light Duty Engine for Different Injection Strategies. , 0, , .		9
65	Lift-Off Length in an Optical Heavy-Duty Diesel Engine: Effects of Swirl and Jet-Jet Interactions. SAE International Journal of Engines, 2015, 8, 2188-2198.	0.4	9
66	Improved measurement precision in decay time-based phosphor thermometry. Applied Physics B: Lasers and Optics, 2016, 122, 1.	2.2	9
67	Sources of error for single-shot PMT-based phosphor thermometry in harsh conditions. Measurement Science and Technology, 2021, 32, 084003.	2.6	9
68	Spatiotemporal flame mapping in a large-bore marine diesel engine using multiple high-speed cameras. International Journal of Engine Research, 2020, 21, 622-631.	2.3	8
69	Effects of different injection strategies on ignition and combustion characteristics in an optical PPC engine. Energy, 2020, 203, 117901.	8.8	8
70	A library-based algorithm for evaluation of luminescent decay curves by shape recognition in time domain phosphor thermometry. Journal of Thermal Analysis and Calorimetry, 2014, 115, 545-554.	3.6	7
71	Lift-Off Length in an Optical Heavy-Duty Diesel Engine. SAE International Journal of Engines, 0, 8, 635-646.	0.4	7
72	Development of High Speed Spectroscopic Imaging Techniques for the Time Resolved Study of Spark Ignition Phenomena. , 2000, , .		6

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73	Simultaneous PLIF Imaging of OH and PLII Imaging of Soot for Studying the Late-Cycle Soot Oxidation in an Optical Heavy-Duty Diesel Engine. SAE International Journal of Engines, 0, 9, 849-858.	0.4	6
74	Phosphor thermometry for in-cylinder surface temperature measurements in diesel engines. Journal of Luminescence, 2020, 226, 117415.	3.1	6
75	100 kHz CH ₂ O imaging realized by lower speed planar laser-induced fluorescence and deep learning. Optics Express, 2021, 29, 30857.	3.4	6
76	MD2-3 Quantitative in-cylinder fuel measurements in a heavy duty diesel engine using Structured Laser Illumination Planar Imaging (SLIPI)(MD: Measurement and Diagnostics,General Session Papers). The Proceedings of the International Symposium on Diagnostics and Modeling of Combustion in Internal Combustion Engines, 2012, 2012.8, 500-505.	0.1	6
77	Flow and Temperature Distribution in an Experimental Engine: LES Studies and Thermographic Imaging. , 2010, , .		5
78	Precision in 2D temperature measurements using the thermographic phosphor BAM. Measurement Science and Technology, 2012, 23, 085205.	2.6	5
79	Parameters Influencing Soot Oxidation Rates in an Optical Diesel Engine. SAE International Journal of Engines, 2016, 9, 2044-2055.	0.4	5
80	Investigation of the effect of engine lubricant oil on remote temperature sensing using thermographic phosphors. Journal of Luminescence, 2016, 179, 568-573.	3.1	5
81	Investigating photomultiplier tube nonlinearities in high-speed phosphor thermometry using light emitting diode simulated decay curves. Review of Scientific Instruments, 2021, 92, 123102.	1.3	5
82	A First Application of Thermographic Phosphors in a Marine Two-Stroke Diesel Engine for Surface Temperature Measurement. , 2014, , .		4
83	High-speed planar imaging of OH radicals in turbulent flames assisted by deep learning. Applied Physics B: Lasers and Optics, 2022, 128, 1.	2.2	4
84	Comparison of the Lift-Off Lengths Obtained by Simultaneous OH-LIF and OH* Chemiluminescence Imaging in an Optical Heavy-Duty Diesel Engine. , 2015, , .		3
85	Comparison of Laser-Extinction and Natural Luminosity Measurements for Soot Probing in Diesel Optical Engines. , 2016, , .		3
86	Ultra-High Speed Fuel Tracer PLIF Imaging in a Heavy-Duty Optical PPC Engine. , 2018, , .		3
87	MD1-4 In-cylinder Surface Thermometry using Laser Induced Phosphorescence : New Measurements and comparisons of Alternative Approaches(MD: Measurement and Diagnostics,General Session Papers). The Proceedings of the International Symposium on Diagnostics and Modeling of Combustion in Internal Combustion Engines. 2012. 2012.8. 482-487.	0.1	3
88	Laser excitation effects in lifetime-based high-speed phosphor thermometry. Journal of Luminescence, 2022, 250, 119106.	3.1	3
89	Enhanced color ratio calibration for two-dimensional surface thermometry using laser-induced phosphorescence. Measurement Science and Technology, 2013, 24, 085202.	2.6	2
90	Investigation of Fuel and Load Flexibility in a Siemens Gas Turbine-600/700/800 Burner Under Atmospheric Pressure Conditions Using High-Speed Hydroxyl-PLIF and Hydroxyl Radical Chemiluminescence Imaging. Journal of Engineering for Gas Turbines and Power, 2021, 143, .	1.1	2

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91	Using oxygen-quenched pressure-sensitive paint for oxygen concentration measurements in low-temperature combustion environments. Measurement Science and Technology, 2008, 19, 085307.	2.6	1
92	Response regime studies on standard detectors for decay time determination in phosphor thermometry. , 2013, , .		1
93	CI2-2 Liquid Spray Penetration Length during Late Post Injection in an Optical Light-Duty Diesel Engine(CI: Compression Ignition Engine Combustion,General Session Papers). The Proceedings of the International Symposium on Diagnostics and Modeling of Combustion in Internal Combustion Engines, 2012, 2012.8, 206-211.	0.1	1
94	Laser-induced phosphorescence spectroscopy: development and application of thermographic phosphors (TP) for thermometry in combustion environments. , 2014, , 258-291.		0
95	(3-15) Temporally Resolved Single-Cycle Measurements of Fuel- and OH-Distributions in a Spark Ignition Engine Using High Speed Laser Spectroscopy((D-1)Diagnostics 1-LIF). The Proceedings of the International Symposium on Diagnostics and Modeling of Combustion in Internal Combustion Engines, 2001, 01.204, 78.	0.1	0
96	Development and Application of High-Speed Laser Visualization Techniques in Combustion Research. , 2018, , 241-259.		0
97	Hydroxyl radical dynamics in a gliding arc discharge using high-speed PLIF imaging. Plasma Research Express, 2022, 4, 025007.	0.9	0