

Mattias Richter

List of Publications by Year in descending order

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Version: 2024-02-01

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	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
2	Hydroxyl radical dynamics in a gliding arc discharge using high-speed PLIF imaging. Plasma Research Express, 2022, 4, 025007.	0.9	0
3	Laser excitation effects in lifetime-based high-speed phosphor thermometry. Journal of Luminescence, 2022, 250, 119106.	3.1	3
4	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
5	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
6	Sources of error for single-shot PMT-based phosphor thermometry in harsh conditions. Measurement Science and Technology, 2021, 32, 084003.	2.6	9
7	Stereoscopic high-speed imaging of iron microexplosions and nanoparticle-release. Optics Express, 2021, 29, 34465.	3.4	25
8	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
9	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
10	IJER editorial: The future of the internal combustion engine. International Journal of Engine Research, 2020, 21, 3-10.	2.3	457
11	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
12	Phosphor thermometry for in-cylinder surface temperature measurements in diesel engines. Journal of Luminescence, 2020, 226, 117415.	3.1	6
13	Exhaled respiratory particles during singing and talking. Aerosol Science and Technology, 2020, 54, 1245-1248.	3.1	170
14	Effects of different injection strategies on ignition and combustion characteristics in an optical PPC engine. Energy, 2020, 203, 117901.	8.8	8
15	Simultaneous 360° kHz PLIF/chemiluminescence imaging of fuel, CH ₂ O and combustion in a PPC engine. Proceedings of the Combustion Institute, 2019, 37, 4751-4758.	3.9	27
16	High efficient internal combustion engine using partially premixed combustion with multiple injections. Applied Energy, 2019, 233-234, 516-523.	10.1	28
17	Experimental and numerical study on bluff-body and swirl stabilized diffusion flames. Fuel, 2018, 217, 352-364.	6.4	43
18	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

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19	Investigation of OH and CH ₂ O distributions at ultra-high repetition rates by planar laser induced fluorescence imaging in highly turbulent jet flames. <i>Fuel</i> , 2018, 234, 1528-1540.	6.4	24
20	Ultra-High Speed Fuel Tracer PLIF Imaging in a Heavy-Duty Optical PPC Engine. , 2018, , .		3
21	Simultaneous multispectral imaging of flame species using Frequency Recognition Algorithm for Multiple Exposures (FRAME). <i>Combustion and Flame</i> , 2018, 192, 160-169.	5.2	22
22	Development and Application of High-Speed Laser Visualization Techniques in Combustion Research. , 2018, , 241-259.		0
23	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
24	Thin reaction zone and distributed reaction zone regimes in turbulent premixed methane/air flames: Scalar distributions and correlations. <i>Combustion and Flame</i> , 2017, 175, 220-236.	5.2	72
25	Instantaneous 3D imaging of flame species using coded laser illumination. <i>Proceedings of the Combustion Institute</i> , 2017, 36, 4585-4591.	3.9	35
26	Simultaneous Burst Imaging of Dual Species Using Planar Laser-Induced Fluorescence at 50â€‰kHz in Turbulent Premixed Flames. <i>Applied Spectroscopy</i> , 2017, 71, 1363-1367.	2.2	13
27	Ultra-high-speed PLIF imaging for simultaneous visualization of multiple species in turbulent flames. <i>Optics Express</i> , 2017, 25, 30214.	3.4	39
28	Parameters Influencing Soot Oxidation Rates in an Optical Diesel Engine. <i>SAE International Journal of Engines</i> , 2016, 9, 2044-2055.	0.4	5
29	Comparison of Laser-Extinction and Natural Luminosity Measurements for Soot Probing in Diesel Optical Engines. , 2016, , .		3
30	Investigation of the effect of engine lubricant oil on remote temperature sensing using thermographic phosphors. <i>Journal of Luminescence</i> , 2016, 179, 568-573.	3.1	5
31	Improved measurement precision in decay time-based phosphor thermometry. <i>Applied Physics B: Lasers and Optics</i> , 2016, 122, 1.	2.2	9
32	Remote temperature sensing on and beneath atmospheric plasma sprayed thermal barrier coatings using thermographic phosphors. <i>Surface and Coatings Technology</i> , 2016, 302, 359-367.	4.8	14
33	Comparison of the Lift-Off Lengths Obtained by Simultaneous OH-LIF and OH* Chemiluminescence Imaging in an Optical Heavy-Duty Diesel Engine. , 2015, , .		3
34	Lift-Off Length in an Optical Heavy-Duty Diesel Engine: Effects of Swirl and Jet-Jet Interactions. <i>SAE International Journal of Engines</i> , 2015, 8, 2188-2198.	0.4	9
35	Laser-induced phosphorescence spectroscopy: development and application of thermographic phosphors (TP) for thermometry in combustion environments. , 2014, , 258-291.		0
36	Development of an automatic routine for calibration of thermographic phosphors. <i>Measurement Science and Technology</i> , 2014, 25, 025201.	2.6	19

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37	A library-based algorithm for evaluation of luminescent decay curves by shape recognition in time domain phosphor thermometry. <i>Journal of Thermal Analysis and Calorimetry</i> , 2014, 115, 545-554.	3.6	7
38	Time-resolved (kHz) 3D imaging of OH PLIF in a flame. <i>Experiments in Fluids</i> , 2014, 55, 1.	2.4	48
39	A First Application of Thermographic Phosphors in a Marine Two-Stroke Diesel Engine for Surface Temperature Measurement. , 2014, , .		4
40	Simultaneous visualization of OH, CH, CH ₂ O and toluene PLIF in a methane jet flame with varying degrees of turbulence. <i>Proceedings of the Combustion Institute</i> , 2013, 34, 1475-1482.	3.9	72
41	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
42	Picosecond excitation for reduction of photolytic effects in two-photon laser-induced fluorescence of CO. <i>Proceedings of the Combustion Institute</i> , 2013, 34, 3541-3548.	3.9	22
43	Response regime studies on standard detectors for decay time determination in phosphor thermometry. , 2013, , .		1
44	Enhanced color ratio calibration for two-dimensional surface thermometry using laser-induced phosphorescence. <i>Measurement Science and Technology</i> , 2013, 24, 085202.	2.6	2
45	Comparison of Three Schemes of Two-Photon Laser-Induced Fluorescence for CO Detection in Flames. <i>Applied Spectroscopy</i> , 2013, 67, 314-320.	2.2	21
46	Investigation and compensation of the nonlinear response in photomultiplier tubes for quantitative single-shot measurements. <i>Review of Scientific Instruments</i> , 2012, 83, 034901.	1.3	23
47	Limitations of ICCD detectors and optimized 2D phosphor thermometry. <i>Measurement Science and Technology</i> , 2012, 23, 035201.	2.6	20
48	Comparison of photo detectors and operating conditions for decay time determination in phosphor thermometry. <i>Review of Scientific Instruments</i> , 2012, 83, 094901.	1.3	13
49	Precision in 2D temperature measurements using the thermographic phosphor BAM. <i>Measurement Science and Technology</i> , 2012, 23, 085205.	2.6	5
50	MD1-4 In-cylinder Surface Thermometry using Laser Induced Phosphorescence : New Measurements and comparisons of Alternative Approaches(MD: Measurement and Diagnostics,General Session Papers). <i>The Proceedings of the International Symposium on Diagnostics and Modeling of Combustion in Internal Combustion Engines</i> , 2012, 2012.8, 482-487.	0.1	3
51	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). <i>The Proceedings of the International Symposium on Diagnostics and Modeling of Combustion in Internal Combustion Engines</i> , 2012, 2012.8, 500-505.	0.1	6
52	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). <i>The Proceedings of the International Symposium on Diagnostics and Modeling of Combustion in Internal Combustion Engines</i> , 2012, 2012.8, 206-211.	0.1	1
53	Analysis of multiple scattering suppression using structured laser illumination planar imaging in scattering and fluorescing media. <i>Optics Express</i> , 2011, 19, 13647.	3.4	55
54	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

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55	Thermographic phosphors for thermometry: A survey of combustion applications. <i>Progress in Energy and Combustion Science</i> , 2011, 37, 422-461.	31.2	245
56	Visualization and understanding of combustion processes using spatially and temporally resolved laser diagnostic techniques. <i>Proceedings of the Combustion Institute</i> , 2011, 33, 69-97.	3.9	133
57	Three-dimensional measurement of the local extinction coefficient in a dense spray. <i>Measurement Science and Technology</i> , 2011, 22, 125303.	2.6	27
58	Flow and Temperature Distribution in an Experimental Engine: LES Studies and Thermographic Imaging. , 2010, , .		5
59	Survivability of thermographic phosphors (YAG:Dy) in a combustion environment. <i>Measurement Science and Technology</i> , 2010, 21, 037002.	2.6	33
60	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
61	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
62	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
63	Two-dimensional thermometry using temperature-induced line shifts of ZnO:Zn and ZnO:Ga fluorescence. <i>Optics Letters</i> , 2008, 33, 1327.	3.3	46
64	High-speed structured planar laser illumination for contrast improvement of two-phase flow images. <i>Optics Letters</i> , 2008, 33, 2752.	3.3	54
65	Spatially resolved, single-ended two-dimensional visualization of gas flow phenomena using structured illumination. <i>Applied Optics</i> , 2008, 47, 3927.	2.1	16
66	Application of structured illumination for multiple scattering suppression in planar laser imaging of dense sprays. <i>Optics Express</i> , 2008, 16, 17870.	3.4	148
67	Investigations of blue emitting phosphors for thermometry. <i>Measurement Science and Technology</i> , 2008, 19, 125304.	2.6	51
68	Using oxygen-quenched pressure-sensitive paint for oxygen concentration measurements in low-temperature combustion environments. <i>Measurement Science and Technology</i> , 2008, 19, 085307.	2.6	1
69	Laser-Induced Phosphorescence for Surface Thermometry in the Afterburner of an Aircraft Engine. <i>AIAA Journal</i> , 2007, 45, 2966-2971.	2.6	20
70	Simultaneous PIV/OH-PLIF, Rayleigh thermometry/OH-PLIF and stereo PIV measurements in a low-swirl flame. <i>Applied Optics</i> , 2007, 46, 3928.	2.1	92
71	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
72	Development of high temporally and spatially (three-dimensional) resolved formaldehyde measurements in combustion environments. <i>Review of Scientific Instruments</i> , 2006, 77, 013104.	1.3	23

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73	Optical Diagnostics for Characterization of a Full-Size Fighter-Jet Afterburner. , 2005, , 813.		12
74	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
75	Cycle Resolved Wall Temperature Measurements Using Laser-Induced Phosphorescence in an HCCI Engine. , 2005, , .		16
76	Chemiluminescence sensor for local equivalence ratio of reacting mixtures of fuel and air (FLAMESEEK). Applied Thermal Engineering, 2004, 24, 1619-1632.	6.0	69
77	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
78	Three-dimensional laser induced fluorescence of fuel distributions in an HCCI engine. Proceedings of the Combustion Institute, 2002, 29, 679-685.	3.9	92
79	(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
80	Development of High Speed Spectroscopic Imaging Techniques for the Time Resolved Study of Spark Ignition Phenomena. , 2000, , .		6
81	The Influence of Charge Inhomogeneity on the HCCI Combustion Process. , 0, , .		96
82	The HCCI Combustion Process in a Single Cycle - Speed Fuel Tracer LIF and Chemiluminescence Imaging. , 0, , .		102
83	High-Speed PLIF Imaging for Investigation of Turbulence Effects on Heat Release Rates in HCCI Combustion. , 0, , .		12
84	Study of Fuel Stratification on Spark Assisted Compression Ignition (SACI) Combustion with Ethanol Using High Speed Fuel PLIF. , 0, , .		25
85	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. SAE International Journal of Fuels and Lubricants, 0, 2, 645-660.	0.2	37
86	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
87	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
88	Laser-Induced Phosphorescence and the Impact of Phosphor Coating Thickness on Crank-Angle Resolved Cylinder Wall Temperatures. SAE International Journal of Engines, 0, 4, 1689-1698.	0.4	35
89	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
90	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

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91	Effects of Injection Strategies on Fluid Flow and Turbulence in Partially Premixed Combustion (PPC) in a Light Duty Engine. , 0, , .		19
92	High-Speed Particle Image Velocimetry Measurement of Partially Premixed Combustion (PPC) in a Light Duty Engine for Different Injection Strategies. , 0, , .		9
93	Lift-Off Length in an Optical Heavy-Duty Diesel Engine. SAE International Journal of Engines, 0, 8, 635-646.	0.4	7
94	Optical study on combustion transition from HCCI to PPC with gasoline compression ignition in a HD engine. , 0, , .		16
95	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
96	Heat Loss Analysis of a Steel Piston and a YSZ Coated Piston in a Heavy-Duty Diesel Engine Using Phosphor Thermometry Measurements. SAE International Journal of Engines, 0, 10, 1954-1968.	0.4	26
97	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