Thomas Seeger

List of Publications by Year
in descending order

121 papers	2,398 citations	159525 30 h-index	265120 42 g-index
121 all docs	121 docs citations	121 times ranked	1085 citing authors

#	Article	IF	Citations
1	Design and characterization of a Raman-scattering-based sensor system for temporally resolved gas analysis and its application in a gas turbine power plant. Measurement Science and Technology, 2008, 19, 085408.	1.4	120
2	Experimental comparison of single-shot broadband vibrational and dual-broadband pure rotational coherent anti-Stokes Raman scattering in hot air. Applied Optics, 1996, 35, 2665.	2.1	93
3	Gas-phase temperature measurement in the vaporizing spray of a gasoline direct-injection injector by use of pure rotational coherent anti-Stokes Raman scattering. Optics Letters, 2004, 29, 247.	1.7	66
4	Determination of temperatures and fuel/air ratios in an ethene-air flame by dual-pump CARS. Journal of Raman Spectroscopy, 2003, 34, 946-951.	1.2	63
5	Laser-induced breakdown flame thermometry. Combustion and Flame, 2012, 159, 3576-3582.	2.8	63
6	Picosecond time-resolved pure-rotational coherent anti-Stokes Raman spectroscopy in sooting flames. Proceedings of the Combustion Institute, 2011, 33, 831-838.	2.4	62
7	Picosecond time-resolved pure-rotational coherent anti-Stokes Raman spectroscopy for N_2 thermometry. Optics Letters, 2009, 34, 3755.	1.7	61
8	Application of 266-nm and 355-nm Nd:YAG laser radiation for the investigation of fuel-rich sooting hydrocarbon flames by Raman scattering. Applied Optics, 2004, 43, 5564.	2.1	60
9	Quantitative Analysis of Alphaâ€‹scp›D‹/scp›â€glucose in an Ionic Liquid by Using Infrared Spectroscopy. ChemPhysChem, 2008, 9, 1317-1322.	1.0	51
10	Dual-pump CARS for the simultaneous detection of N2, O2 and CO in CH4 flames. Journal of Raman Spectroscopy, 2002, 33, 919-924.	1.2	49
11	Determination of gas composition in a biogas plant using a Raman-based sensor system. Measurement Science and Technology, 2014, 25, 075503.	1.4	49
12	Simultaneous vibrational and pure rotational coherent anti-Stokes Raman spectroscopy for temperature and multispecies concentration measurements demonstrated in sooting flames. Applied Optics, 2002, 41, 564.	2.1	46
13	High-pressure pure rotational CARS: comparison of temperature measurements with O2, N2and synthetic air. Journal of Raman Spectroscopy, 2003, 34, 932-939.	1.2	46
14	Local fuel concentration measurements for mixture formation diagnostics using diffraction by laserâ€induced gratings in comparison to spontaneous Raman scattering. Journal of Raman Spectroscopy, 2008, 39, 711-721.	1.2	46
15	Non-intrusive gas-phase temperature measurements inside a porous burner using dual-pump CARS. Proceedings of the Combustion Institute, 2009, 32, 3123-3129.	2.4	45
16	Characterization of a fast gas analyzer based on Raman scattering for the analysis of synthesis gas. Review of Scientific Instruments, 2010, 81, 125104.	0.6	44
17	Linewidth modelling of C2H2ïŁ¿N2 mixtures tested by rotational CARS measurements. Journal of Raman Spectroscopy, 2006, 37, 647-654.	1.2	40
18	Combined coherent anti-Stokes Raman spectroscopy and linear Raman spectroscopy for simultaneous temperature and multiple species measurements. Optics Letters, 2006, 31, 1908.	1.7	39

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19	On the effect of ionic wind on structure and temperature of laminar premixed flames influenced by electric fields. Combustion and Flame, 2017, 176, 391-399.	2.8	37
20	A study of the Raman spectra of alkanes in the Fermi-resonance region. Journal of Molecular Structure, 2004, 708, 189-195.	1.8	35
21	Suppression of Raman-resonant interferences in rotational coherent anti-Stokes Raman spectroscopy using time-delayed picosecond probe pulses. Optics Letters, 2010, 35, 2040.	1.7	35
22	Simultaneous temperature and relative nitrogenâ€“oxygen concentration measurements in air with pure rotational coherent anti-Stokes Raman scattering for temperatures to as high as 2050 K. Applied Optics, 1997, 36, 3500.	2.1	34
23	Planar laser-induced fluorescence of HCO for instantaneous flame front imaging in hydrocarbon flames. Proceedings of the Combustion Institute, 2009, 32, 921-928.	2.4	34
24	Quantitative one-dimensional imaging using picosecond dual-broadband pure-rotational coherent anti-Stokes Raman spectroscopy. Applied Optics, 2011, 50, 1770.	2.1	34
25	Demonstration of a signal enhanced fast Raman sensor for multiâ€species gas analyses at a low pressure range for anesthesia monitoring. Journal of Raman Spectroscopy, 2015, 46, 708-715.	1.2	34
26	Gas phase temperature measurements in the liquid and particle regime of a flame spray pyrolysis process using O₂-based pure rotational coherent anti-Stokes Raman scattering. Applied Optics, 2012, 51, 6063.	0.9	33
27	One-dimensional vibrational coherent anti-Stokes Raman-scattering thermometry. Optics Letters, 1996, 21, 1532.	1.7	32
28	Broadband time-domain absorption spectroscopy with a ns-pulse supercontinuum source. Optics Express, 2010, 18, 22762.	1.7	32
29	Simultaneous coherent anti-Stokes Raman scattering and two-dimensional laser Rayleigh thermometry in a contained technical swirl combustor. Applied Optics, 1995, 34, 2780.	2.1	31
30	Investigation of the combustion process in an auxiliary heating system using dual-pump CARS. Journal of Raman Spectroscopy, 2006, 37, 633-640.	1.2	31
31	Application of an optical pulse stretcher to coherent anti-Stokes Raman spectroscopy. Optics Letters, 2004, 29, 2381.	1.7	30
32	Laser-induced breakdown spectroscopy in gases using ungated detection in combination with polarization filtering and online background correction. Measurement Science and Technology, 2010, 21, 065303.	1.4	29
33	Identification of spatial averaging effects in vibrational CARS spectra. Journal of Raman Spectroscopy, 2006, 37, 641-646.	1.2	28
34	Dual-pump CARS measurements of N2, H2 and CO in a partially premixed flame. Journal of Raman Spectroscopy, 2007, 38, 983-988.	1.2	27
35	Temperature and water mole fraction measurements by time-domain-based supercontinuum absorption spectroscopy in a flame. Applied Physics B: Lasers and Optics, 2015, 118, 153-158.	1.1	27
36	Pure rotational coherent anti-Stokes Raman scattering: comparison of evaluation techniques for determining single-shot simultaneous temperature and relative N_2â€“O_2 concentration. Applied Optics, 1998, 37, 5659.	2.1	26

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37	Time-resolved CO_2 thermometry for pressures as great as 5 MPa by use of pure rotational coherent anti-Stokes Raman scattering. Applied Optics, 2005, 44, 6526.	2.1	26
38	Hybrid femtosecond/picosecond coherent antiâ€Stokes Raman scattering for highâ€speed CH₄/N₂ measurements in binary gas mixtures. Journal of Raman Spectroscopy, 2013, 44, 1336-1343.	1.2	26
39	Split-probe hybrid femtosecond/picosecond rotational CARS for time-domain measurement of S-branch Raman linewidths within a single laser shot. Optics Letters, 2013, 38, 4566.	1.7	26
40	TEMPERATURE AND CO CONCENTRATION MEASUREMENTS IN A PARTIALLY PREMIXED CH4/AIR COFLOWING JET FLAME USING COHERENT ANTI-STOKES RAMAN SCATTERING. Combustion Science and Technology, 2004, 176, 1965-1984.	1.2	25
41	Simultaneous and time-resolved temperature and relative CO_2â€“N_2 and O_2â€“CO_2â€“N_2 concentration measurements with pure rotational coherent anti-Stokes Raman scattering for pressures as great as 5 MPa. Applied Optics, 2005, 44, 5582.	2.1	25
42	Spatially resolved flame zone classification of a flame spray nanoparticle synthesis process by combining different optical techniques. Journal of Aerosol Science, 2014, 69, 82-97.	1.8	25
43	Simultaneous temperature and relative O_2â€“N_2 concentration measurements by single-shot pure rotational coherent anti-Stokes Raman scattering for pressures as great as 5 MPa. Applied Optics, 2000, 39, 6918.	2.1	23
44	Time-resolved measurement of the local equivalence ratio in a gaseous propane injection process using laser-induced gratings. Optics Express, 2006, 14, 12994.	1.7	22
45	High-speed CH planar laser-induced fluorescence imaging using a multimode-pumped optical parametric oscillator. Optics Letters, 2011, 36, 3927.	1.7	22
46	Investigation of compression temperature in highly charged spark-ignition engines. International Journal of Engine Research, 2011, 12, 282-292.	1.4	22
47	Simultaneous measurements of fuel vapor concentration and temperature in a flashâ€boiling propane jet using laserâ€induced gratings. Journal of Raman Spectroscopy, 2013, 44, 1356-1362.	1.2	22
48	Accuracy and precision of single-pulse one-dimensional vibrational coherent anti-Stokes Raman-scattering temperature measurements. Applied Optics, 1997, 36, 3253.	2.1	20
49	LOCALLY RESOLVED INVESTIGATION OF THE VAPORIZATION OF GDI SPRAYS APPLYING DIFFERENT LASER TECHNIQUES. , 2006, 16, 319-330.		20
50	Simultaneous temperature and relative oxygen and methane concentration measurements in a partially premixed sooting flame using a novel CARS-technique. Journal of Molecular Structure, 2003, 661-662, 515-524.	1.8	19
51	OHâ€thermometry using laser polarization spectroscopy and laserâ€induced fluorescence spectroscopy in the OH Aâ€X (1,0) band. Journal of Raman Spectroscopy, 2009, 40, 828-835.	1.2	19
52	Development of a simplified dual-pump dual-broadband coherent anti-Stokes Raman scattering system. Applied Optics, 2009, 48, B43.	2.1	19
53	Determination of Physicochemical Parameters of Ionic Liquids and Their Mixtures with Solvents Using Laser-Induced Gratings. Journal of Physical Chemistry B, 2011, 115, 8528-8533.	1.2	19
54	Characterization of a CH planar laser-induced fluorescence imaging system using a kHz-rate multimode-pumped optical parametric oscillator. Applied Optics, 2012, 51, 2589.	0.9	19

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55	Simultaneous Measurement of Speed of Sound, Thermal Diffusivity, and Bulk Viscosity of 1-Ethyl-3-methylimidazolium-Based Ionic Liquids Using Laser-Induced Gratings. Journal of Physical Chemistry B, 2014, 118, 14493-14501.	1.2	19
56	Numerical and experimental study of the vaporization cooling in gasoline direct injection sprays. Proceedings of the Combustion Institute, 2007, 31, 3067-3073.	2.4	18
57	Determination of probe volume dimensions in coherent measurement techniques. Applied Optics, 2008, 47, 6601.	2.1	18
58	Investigation of the chemical stability of the laser-induced fluorescence tracers acetone, diethylketone, and toluene under IC engine conditions using Raman spectroscopy. Applied Optics, 2013, 52, 6300.	0.9	18
59	Validation experiments for spatially resolved one-dimensional emission spectroscopy temperature measurements by dual-pump CARS in a sooting flame. Proceedings of the Combustion Institute, 2009, 32, 745-752.	2.4	17
60	In situ determination of N2 broadening coefficients in flames for rotational CARS thermometry. Proceedings of the Combustion Institute, 2013, 34, 3637-3644.	2.4	17
61	Analysis of exhaled air for early-stage diagnosis of lung cancer: opportunities and challenges. Russian Chemical Reviews, 2018, 87, 904-921.	2.5	17
62	High temperature O₂ vibrational CARS thermometry applied to a turbulent oxyâ€fuel combustion process. Journal of Raman Spectroscopy, 2016, 47, 1149-1156.	1.2	15
63	Evaluation of two different gas temperatures and their volumetric fraction from broadband N_2 coherent anti-Stokes Raman spectroscopy spectra. Applied Optics, 1995, 34, 3313.	2.1	14
64	Investigation of porous media combustion by coherent anti-Stokes Raman spectroscopy. Experiments in Fluids, 2010, 49, 775-781.	1.1	14
65	Development of temperature evaluation of pure Rotational Coherent Anti-Stokes Raman Scattering (RCARS) spectra influenced by spatial averaging effects. Proceedings of the Combustion Institute, 2015, 35, 3715-3722.	2.4	14
66	Entwicklung eines Echtzeitanalyse-Systems zur Charakterisierung von Brenngasgemischen in Gasturbinenkraftwerken. Chemie-Ingenieur-Technik, 2011, 83, 247-253.	0.4	13
67	Determination of N₂â€“N₂ and N₂â€“O₂ S-branch Raman linewidths using time-resolved picosecond pure rotational coherent anti-Stokes Raman scattering. Applied Optics, 2019, 58, C47.	0.9	13
68	Untersuchung von diodenlaserbasierten Mehrkomponenten-Konzentrationsmesssystemen zur Gasanalyse (Investigation of Diode Laser-Based Multi-Species Gas Sensor Concepts). TM Technisches Messen, 2001, 68, 400.	0.3	11
69	Application of linear Raman spectroscopy for the determination of acetone decomposition. Optics Express, 2011, 19, 11052.	1.7	11
70	Oxygen rotational Raman linewidth determination considering nonmonoexponential decoherence behavior. Journal of Raman Spectroscopy, 2019, 50, 1260-1267.	1.2	11
71	Laserbasierte On-line-Analyse von Biogasen mit einer Raman-Sonde. TM Technisches Messen, 2014, 81, 546-553.	0.3	10
72	Optimizing the operational strategy of a solar-driven reactor for thermochemical hydrogen production. International Journal of Hydrogen Energy, 2022, 47, 14453-14468.	3.8	10

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73	Comprehensive Characterization of a Sooting Laminar Methane-Diffusion Flame Using Different Laser Techniques. Chemical Engineering and Technology, 2004, 27, 1150-1156.	0.9	9
74	Evaluation of temperature and concentration in H₂ï£¿N₂ dualâ€pump CARS spectra using the Keilson and Storer threeâ€dimensional model for H₂ Qâ€branch. Journal of Raman Spectroscopy, 2009, 40, 781-787.	1.2	8
75	Holistic energy flow analysis of a solar driven thermo-chemical reactor set-up for sustainable hydrogen production. Renewable Energy, 2022, 189, 1358-1374.	4.3	8
76	Characterization of a Combined CARS and Interferometric Rayleigh Scattering System. , 2007, , .		7
77	Development of Supersonic Combustion Experiments for CFD Modeling. , 2007, , .		7
78	CH and NO planar laser-induced fluorescence and Rayleigh-scattering in turbulent flames using a multimode optical parametric oscillator. Applied Optics, 2021, 60, 98.	0.9	7
79	Two-photon stimulated Raman excitation of thermal laser-induced gratings in molecular gases using broadband radiation of a single laser. Optics Express, 2008, 16, 18379.	1.7	6
80	Investigation on wall and gas temperatures inside a swirled oxy-fuel combustion chamber using thermographic phosphors, O2 rotational and vibrational CARS. Fuel, 2021, 289, 119787.	3.4	6
81	Improvement of the coherent model function for S-branch Raman linewidth determination in oxygen. Applied Optics, 2021, 60, C76.	0.9	6
82	Laser photoionization mass spectroscopy with picosecond resolution. Applied Physics Letters, 1988, 53, 816-818.	1.5	5
83	Near-resonance enhanced O_2 detection for dual-broadband pure rotational coherent anti-Stokes Raman scattering with an ultraviolet-visible setup at 266 nm. Applied Optics, 2005, 44, 4157.	2.1	5
84	Gas Sensor for Volatile Anesthetic Agents Based on Raman Scattering. Physics Procedia, 2012, 39, 835-842.	1.2	5
85	Atemzyklusgenaues AnÃsthesiegas-Monitoring mit einer laserbasierten Raman-Sonde unter klinischen Bedingungen. TM Technisches Messen, 2016, 83, 289-299.	0.3	5
86	Oscillometricâ€“gravimetric measurements of pure gas adsorption equilibria without the non-adsorption of helium hypothesis. Adsorption, 2017, 23, 753-766.	1.4	5
87	Real time executable model for dynamic heat flow analysis of a solar hydrogen reactor. TM Technisches Messen, 2020, 87, 360-371.	0.3	5
88	Temperature dependent determination of the S-branch Raman linewidths of oxygen and carbon dioxide in an oxyfuel relevant mixture. Applied Optics, 2021, 60, 4410.	0.9	4
89	Characterization of temperature distributions in a swirled oxy-fuel coal combustor using tomographic absorption spectroscopy with fluctuation modelling. Applications in Energy and Combustion Science, 2021, 6, 100025.	0.9	4
90	Three-color vibrational CARS thermometry of fuel-rich ethylene/air flames using a potassium gadolinium tungstate Raman-active crystal as a source of narrowband probe radiation. Applied Optics, 2017, 56, E77.	2.1	4

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91	Koadsorptionsgleichgewichte von KraftstoffdÃmpfen an feuchten Aktivkohlefiltern. Chemie-Ingenieur-Technik, 2014, 86, 58-66.	0.4	3
92	Determination of the Gas-Phase Temperature in the Vaporizing Spray of a GDI-Injector Using Pure Rotational CARS. , 2004, , .		2
93	Comparison of <scp>Raman</scp>â€active crystals as a narrowband probe light source for picosecond threeâ€color vibrational <scp>CARS</scp> thermometry. Journal of Raman Spectroscopy, 2017, 48, 1026-1032.	1.2	2
94	Laser applications to chemical, security, and environmental analysis: introduction to the feature issue. Applied Optics, 2017, 56, LAC1.	2.1	2
95	Laser-induced Breakdown Spectroscopy: A Simple but Versatile Tool for Combustion Diagnostics. , 2012, , .		2
96	Sensor system for long-term analysis of fuel vapour restraint systems. TM Technisches Messen, 2020, 87, 304-311.	0.3	2
97	Umfassende Charakterisierung einer ruÃŸenden laminaren Methan-Diffusionsflamme unter Nutzung verschiedener Lasermessverfahren. Chemie-Ingenieur-Technik, 2003, 75, 573-576.	0.4	1
98	Multi-species detection with dual-pump-CARS: Possibilities and limitations. Physics Procedia, 2010, 5, 703-712.	1.2	1
99	Emission spectroscopy based sensor developed for engine testing. TM Technisches Messen, 2017, 84, 13-22.	0.3	1
100	Studies of the human breathing. , 2017, , .		1
101	IEEE Workshop on Industrial and Medical Measurement and Sensor Technology â€“ SENSORICA 2017. TM Technisches Messen, 2018, 85, 291-291.	0.3	1
102	Laser applications to chemical, security, and environmental analysis: introduction to the feature issue. Applied Optics, 2019, 58, LAC1.	0.9	1
103	Longâ€Term Behavior of Fuel Vapor Retaining Systems for Biofuels (E0, E10) Part 1: Regeneration with Dry Flushing Nitrogen. Chemie-Ingenieur-Technik, 0, , .	0.4	1
104	Long-Term Behavior of Fuel Vapor Retaining Systems for Pure (E0) and Blended Fuels (E10) Part 2: Regeneration with Nitrogen of 70% Relative Humidity. Processes, 2022, 10, 397.	1.3	1
105	Time-Resolved Picosecond Pure Rotational Coherent Anti-Stokes Raman Spectroscopy for Flame Diagnostics (Invited). , 2010, , .		0
106	CH Fluorescence Imaging at High Repetition Rates. , 2011, , .		0
107	Gas-phase diagnostic by time-resolved rotational coherent anti-Stokes Raman spectroscopy. , 2011, , .		0
108	Local Composition and Temperature Determination in Laminar Flames by Laser-Induced Plasma Diagnostics. , 2011, , .		0

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109	Flame Temperature Measurements by Time-domain Based Supercontinuum Absorption Spectroscopy. Energy Procedia, 2015, 66, 129-132.	1.8	0
110	Heat flux sensor based on ferroelectric. , 2017, , .		0
111	Flame temperature measurements in CI engines using an emission spectroscopy sensor system. , 2017, , .		0
112	Identification of pure rotational CARS spectra influenced by high temperature gradients. , 2017, , .		0
113	Demonstration of a signal enhanced fast Raman sensor for human breath analysis. , 2017, , .		0
114	IEEE Workshop on Industrial and Medical Measurement and Sensor Technology â€“ SENSORICA 2016. TM Technisches Messen, 2017, 84, 1-1.	0.3	0
115	Opticsâ€”Frontiers in Fundamental Research and Applications. Optics, 2020, 1, 173-173.	0.6	0
116	Laser applications to chemical, security, and environmental analysis: introduction to the feature issue. Applied Optics, 2021, 60, LAC1.	0.9	0
117	Time-Resolved Picosecond Pure-Rotational Coherent anti-Stokes Raman Spectroscopy for Thermometry and Species Concentration in Flames. , 2010, , .		0
118	Time-Resolved Picosecond Pure-Rotational Coherent anti-Stokes Raman Spectroscopy for Thermometry and Species Concentration in Combustion Environments. , 2010, , .		0
119	Characterization of gas phase temperatures in dependence of particle presence in the flame spray pyrolysis process. , 2012, , .		0
120	Quantitative measurement of the volatile anesthetic agents and respiratory gases during anesthesia by a compact, robust and mobile sensor based on linear Raman scattering. , 2014, , .		0
121	IEEE Workshop on Industrial and Medical Measurement and Sensor Technology â€“ SENSORICA 2019. TM Technisches Messen, 2020, 87, 303-303.	0.3	0