# Robert P Lucht

List of Publications by Year
in descending order



| 86 | 1,954 | 279798 23 | 265206 42 |
|---|---|---|---|
| papers | citations | h-index | g-index |

| 86 | 86 | 86 | 702 |
|---|---|---|---|
| all docs | docs citations | times ranked | citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Nitrogen and hydrogen CARS temperature measurements in a hydrogen/air flame using a near-adiabatic flat-flame burner. Combustion and Flame, 1997, 109, 323-331. | 5.2 | 164 |
| 2 | Femtosecond coherent anti-Stokes Raman scattering measurement of gas temperatures from frequency-spread dephasing of the Raman coherence. Applied Physics Letters, 2006, 89, 251112. | 3.3 | 131 |
| 3 | Two-photon-excited fluorescence measurement of hydrogen atoms in flames. Optics Letters, 1983, 8, 365. | 3.3 | 119 |
| 4 | Gas-phase single-shot thermometry at 1 kHz using fs-CARS spectroscopy. Optics Letters, 2009, 34, 3857. | 3.3 | 94 |
| 5 | Temperature and CO2 concentration measurements in the exhaust stream of a liquid-fueled combustor using dual-pump coherent anti-Stokes Raman scattering (CARS) spectroscopy. Combustion and Flame, 2004, 138, 273-284. | 5.2 | 71 |
| 6 | Theory of femtosecond coherent anti-Stokes Raman scattering spectroscopy of gas-phase transitions. Journal of Chemical Physics, 2007, 127, 044316. | 3.0 | 68 |
| 7 | Temperature measurements in reacting flows by time-resolved femtosecond coherent anti-Stokes Raman scattering (fs-CARS) spectroscopy. Optics Communications, 2008, 281, 319-325. | 2.1 | 65 |
| 8 | Theoretical modeling of single-laser-shot, chirped-probe-pulse femtosecond coherent anti-Stokes Raman scattering thermometry. Applied Physics B: Lasers and Optics, 2011, 104, 699-714. | 2.2 | 62 |
| 9 | Measurements of OH mole fraction and temperature up to 20 kHz by using a diode-laser-based UV absorption sensor. Applied Optics, 2005, 44, 6729. | 2.1 | 57 |
| 10 | Theoretical calculation of line shapes and saturation effects in polarization spectroscopy. Journal of Chemical Physics, 1998, 109, 5830-5843. | 3.0 | 55 |
| 11 | Two-color, two-photon laser-induced polarization spectroscopy (LIPS) measurements of atomic hydrogen in near-adiabatic, atmospheric pressure hydrogen/air flames. Combustion and Flame, 2004, 137, 523-537. | 5.2 | 52 |
| 12 | Electronic-resonance-enhanced coherent anti-Stokes Raman spectroscopy of nitric oxide. Applied Physics Letters, 2003, 83, 1887-1889. | 3.3 | 48 |
| 13 | Development of injection-seeded, pulsed optical parametric generator/oscillator systems for high-resolution spectroscopy. Applied Physics B: Lasers and Optics, 2005, 80, 669-680. | 2.2 | 45 |
| 14 | Simultaneous 5 kHz OH-PLIF/PIV for the study of turbulent combustion at engine conditions. Applied Physics B: Lasers and Optics, 2015, 118, 109-130. | 2.2 | 42 |
| 15 | Diode-laser-based sensor for ultraviolet absorption measurements of atomic mercury. Applied Physics B: Lasers and Optics, 2007, 87, 341-353. | 2.2 | 35 |
| 16 | Chirped probe pulse femtosecond coherent anti-Stokes Raman scattering thermometry at 5 kHz in a Gas Turbine Model Combustor. Proceedings of the Combustion Institute, 2015, 35, 3731-3738. | 3.9 | 34 |
| 17 | The development of an optically accessible, high-power combustion test rig. Review of Scientific Instruments, 2014, 85, 035105. | 1.3 | 33 |
| 18 | Atomic hydrogen concentration profile measurements in stagnation-flow diamond-forming flames using three-photon excitation laser-induced fluorescence. Journal of Applied Physics, 1998, 83, 2315-2326. | 2.5 | 32 |

| # | Article | IF | Citations |
|---|---|---|---|
| 19 | Simultaneous acquisition of pure rotational and vibrational nitrogen spectra using three-laser coherent anti-Stokes Raman spectroscopy. Optics Letters, 1987, 12, 386. | 3.3 | 31 |
| 20 | Effects of N2â€“CO polarization beating on femtosecond coherent anti-Stokes Raman scattering spectroscopy of N2. Applied Physics Letters, 2009, 94, 144101. | 3.3 | 31 |
| 21 | Development of a combined pure rotational and vibrational coherent anti-Stokes Raman scattering system. Optics Letters, 2013, 38, 1340. | 3.3 | 26 |
| 22 | High-repetition-rate planar measurements in the wake of a reacting jet injected into a swirling vitiated crossflow. Combustion and Flame, 2016, 163, 241-257. | 5.2 | 26 |
| 23 | Collisional dependence of polarization spectroscopy with a picosecond laser. Journal of Chemical Physics, 2000, 113, 2263-2269. | 3.0 | 25 |
| 24 | Microexplosion Investigation of Monomethylhydrazine Gelled Droplet with OH Planar Laser-Induced Fluorescence. Journal of Propulsion and Power, 2013, 29, 1303-1310. | 2.2 | 24 |
| 25 | Simultaneous CO concentration and temperature measurements using tunable diode laser absorption spectroscopy near 2.3ÂĨ¼m. Applied Physics B: Lasers and Optics, 2014, 117, 7-18. | 2.2 | 24 |
| 26 | Dependence of partially saturated polarization spectroscopy signals on pump intensity and collision rate. Physical Review A, 2001, 64, . | 2.5 | 23 |
| 27 | Measurement of nitric oxide concentrations in flames by using electronic-resonance-enhanced coherent anti-Stokes Raman scattering. Optics Letters, 2006, 31, 3357. | 3.3 | 23 |
| 28 | Detection of atomic hydrogen in flames using picosecond two-color two-photon-resonant six-wave-mixing spectroscopy. Applied Optics, 2007, 46, 3921. | 2.1 | 23 |
| 29 | Dual-pump vibrational CARS measurements of temperature and species concentrations in turbulent premixed flames with CO2 addition. Combustion and Flame, 2017, 181, 239-250. | 5.2 | 22 |
| 30 | Flame stabilization mechanism in reacting jets in swirling vitiated crossflow. Combustion and Flame, 2019, 207, 302-313. | 5.2 | 22 |
| 31 | Polarization suppression of the nonresonant background in femtosecond coherent anti-Stokes Raman scattering for flame thermometry at 5 kHz. Optics Express, 2012, 20, 21495. | 3.4 | 21 |
| 32 | 5 kHz thermometry in a swirl-stabilized gas turbine model combustor using chirped probe pulse femtosecond CARS. Part 1: Temporally resolved swirl-flame thermometry. Combustion and Flame, 2016, 173, 441-453. | 5.2 | 21 |
| 33 | Emission Measurements and CH* Chemiluminescence of a Staged Combustion Rig for Stationary Gas Turbine Applications. Journal of Engineering for Gas Turbines and Power, 2012, 134, . | 1.1 | 20 |
| 34 | Resonant degenerate four-wave mixing spectroscopy of transitions with degenerate energy levels: Saturation and polarization effects. Journal of Chemical Physics, 1999, 111, 10008-10020. | 3.0 | 19 |
| 35 | Time-Resolved Thermal Boundary-Layer Structure in a Pulsatile Reversing Channel Flow. Journal of Heat Transfer, 2001, 123, 655-664. | 2.1 | 19 |
| 36 | Polarization spectroscopy using short-pulse lasers: Theoretical analysis. Journal of Chemical Physics, 2002, 116, 571-580. | 3.0 | 19 |

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|---|---|---|---|
| 37 | CHEMISTRY: Femtosecond Lasers for Molecular Measurements. Science, 2007, 316, 207-208. | 12.6 | 18 |
| 38 | Chirped-probe-pulse femtosecond coherent anti-Stokes Raman scattering concentration measurements. Journal of the Optical Society of America B: Optical Physics, 2013, 30, 188. | 2.1 | 18 |
| 39 | NOX reduction in an axially staged gas turbine model combustor through increase in the combustor exit Mach number. Combustion and Flame, 2020, 212, 282-294. | 5.2 | 18 |
| 40 | Collisional effects on molecular dynamics in electronic-resonance-enhanced CARS. Journal of Modern Optics, 2008, 55, 3263-3272. | 1.3 | 16 |
| 41 | Effects of collisions on electronic-resonance-enhanced coherent anti-Stokes Raman scattering of nitric oxide. Journal of Chemical Physics, 2009, 130, 214304. | 3.0 | 16 |
| 42 | Dual-pump CARS temperature and major species concentration measurements in counter-flow methane flames using narrowband pump and broadband Stokes lasers. Combustion and Flame, 2010, 157, 1390-1399. | 5.2 | 15 |
| 43 | Single-laser-shot femtosecond coherent anti-Stokes Raman scattering thermometry at 1000Hz in unsteady flames. Proceedings of the Combustion Institute, 2011, 33, 839-845. | 3.9 | 14 |
| 44 | Investigation of Gas Heating by Nanosecond Repetitively Pulsed Glow Discharges Used for Actuation of a Laminar Methane-Air Flame. Combustion Science and Technology, 2017, 189, 2012-2022. | 2.3 | 14 |
| 45 | Technique developments and performance analysis of chirped-probe-pulse femtosecond coherent anti-Stokes Raman scattering combustion thermometry. Applied Optics, 2017, 56, 8797. | 1.8 | 14 |
| 46 | Single-laser-shot detection of nitric oxide in reacting flows using electronic resonance enhanced coherent anti-Stokes Raman scattering. Applied Physics Letters, 2008, 93, 091115. | 3.3 | 13 |
| 47 | Structure and dynamics of the wake of a reacting jet injected into a swirling, vitiated crossflow in a staged combustion system. Experiments in Fluids, 2015, 56, 1. | 2.4 | 13 |
| 48 | Vibrational CARS thermometry and one-dimensional numerical simulations in CH4/H2/air partially-premixed flames. International Journal of Hydrogen Energy, 2015, 40, 6959-6969. | 7.1 | 13 |
| 49 | 5 kHz thermometry in a swirl-stabilized gas turbine model combustor using chirped probe pulse femtosecond CARS. Part 2. Analysis of swirl flame dynamics. Combustion and Flame, 2016, 173, 454-467. | 5.2 | 13 |
| 50 | Planar laser imaging and modeling of matrix-assisted pulsed-laser evaporation direct write in the bubble regime. Journal of Applied Physics, 2006, 100, 033107. | 2.5 | 12 |
| 51 | CARS thermometry in laminar sooting ethylene-air co-flow diffusion flames with nitrogen dilution. Combustion and Flame, 2019, 208, 37-44. | 5.2 | 12 |
| 52 | Five kHz thermometry in turbulent spray flames using chirped-probe pulse femtosecond CARS, part I: Processing and interference analysis. Combustion and Flame, 2019, 200, 405-416. | 5.2 | 12 |
| 53 | High dynamic range thermometry at 5â€‰kHz in hydrogenâ€“air diffusion flame using chirpedâ€probeâ€pulse femtosecond coherent antiâ€stokes Raman scattering. Journal of Raman Spectroscopy, 2016, 47, 177-188. | 2.5 | 10 |
| 54 | Effects of self-phase modulation (SPM) on femtosecond coherent anti-Stokes Raman scattering spectroscopy. Optics Express, 2019, 27, 33954. | 3.4 | 10 |

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| 55 | Vibrational CARS thermometry and one-dimensional simulations in laminar H 2 /air counter-flow diffusion flames. International Journal of Hydrogen Energy, 2015, 40, 10662-10672. | 7.1 | 8 |
| 56 | Effect of the nature of vitiated crossflow on the flow-field of a transverse reacting jet. Experiments in Fluids, 2017, 58, 1. | 2.4 | 8 |
| 57 | A model combustor for studying a reacting jet in an oscillating crossflow. Review of Scientific Instruments, 2017, 88, 065112. | 1.3 | 8 |
| 58 | Impact of moderate pumpâ€“Stokes chirp on femtosecond coherent antiâ€Stokes Raman scattering spectra. Journal of Raman Spectroscopy, 2020, 51, 115-124. | 2.5 | 8 |
| 59 | CO2 chirped-probe-pulse femtosecond CARS thermometry. Proceedings of the Combustion Institute, 2021, 38, 1599-1606. | 3.9 | 8 |
| 60 | Structure and mixing of a transient flow of helium injected into an established flow of nitrogen: two dimensional measurement and simulation. Experiments in Fluids, 2009, 46, 559-575. | 2.4 | 6 |
| 61 | Electronic-resonance-enhanced coherent anti-Stokes Raman scattering of nitric oxide: Saturation and Stark effects. Journal of Chemical Physics, 2010, 133, 084310. | 3.0 | 6 |
| 62 | The development and performance of a perforated plate burner to produce vitiated flow with negligible swirl under engine-relevant gas turbine conditions. Review of Scientific Instruments, 2019, 90, 075107. | 1.3 | 6 |
| 63 | Transverse injection of rich, premixed, natural gas-air and natural gas-hydrogen-air reacting jets into high-speed vitiated crossflow at engine-relevant conditions. International Journal of Hydrogen Energy, 2021, 46, 35718-35738. | 7.1 | 4 |
| 64 | Saturated-Fluorescence Measurements of the Hydroxyl Radical. ACS Symposium Series, 1980, , 145-151. | 0.5 | 3 |
| 65 | Measurement and calculation of the Qâ€branch spectrum of nitrogen using inverse Raman spectroscopy and cw Ramanâ€induced polarization spectroscopy. Journal of Raman Spectroscopy, 2008, 39, 68-78. | 2.5 | 3 |
| 66 | Pure rotational coherent antiâ€Stokes Raman scattering spectroscopy of nitric oxide: Determination of Raman tensor invariants. Journal of Raman Spectroscopy, 2020, 51, 807-828. | 2.5 | 2 |
| 67 | Sooting Jet Diffusion Flame Thermometry at 5 kHz using Femtosecond Coherent Anti-Stokes Raman Scattering. , 2014, , . | | 2 |
| 68 | Chirped Probe Pulse Femtosecond Cars H<sub>2</sub>Measurements At Elevated Pressure And Temperature. , 2022, , . | | 2 |
| 69 | Nonperturbative modeling of two-photon absorption in a three-state system. Journal of Chemical Physics, 2004, 121, 9820-9829. | 3.0 | 1 |
| 70 | Reacting Jets in Vitiated Crossflow at High Speeds: The Development of an Optically-Accessible Secondary Combustion Zone. , 2019, , . | | 1 |
| 71 | Two-color, two-photon laser-induced polarization spectroscopy (LIPS) measurements of atomic hydrogen in near-adiabatic, atmospheric pressure hydrogen/air flames. Combustion and Flame, 2004, 137, 523-537. | 5.2 | 1 |
| 72 | Femtosecond coherent anti-Stokes Raman scattering measurement of gas-phase species and temperature. , 2008, , . | | 0 |

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|---|---|---|---|
| 73 | Application of a Two-color Polarization Spectroscopy Technique for Detection of Carbon Monoxide. , 2014, , . | | 0 |
| 74 | Two-color Polarization Spectroscopy Technique for Probing Collisionally Induced Resonances of Nitric Oxide. , 2015, , . | | 0 |
| 75 | Two-photon-absorption line strengths for nitric oxide: Comparison of theory and sub-Doppler, laser-induced fluorescence measurements. Journal of Chemical Physics, 2017, 146, 124311. | 3.0 | 0 |
| 76 | Effects of moderate pump and Stokes chirp on chirped-probe pulse femtosecond coherent anti-Stokes Raman scattering thermometry. , 2018, , . | | 0 |
| 77 | Investigation of the Chirped Probe Pulse Femtosecond Coherent Anti-Stokes Raman Scattering at High Pressure. , 2019, , . | | 0 |
| 78 | Dual-Broadband Coherent anti-Stokes Raman Scattering for Investigating Pure Rotational Raman Spectra of Nitric Oxide. , 2019, , . | | 0 |
| 79 | Theory of Single-Pulse Femtosecond Coherent Anti-Stokes Raman Scattering Using a Chirped Probe Beam. , 2008, , . | | 0 |
| 80 | Fs-CARS for High-Bandwidth, Collision-Free Temperature Measurements. , 2008, , . | | 0 |
| 81 | Kilohertz-Rate, Collision-Free, Gas-Phase Thermometry with Femtosecond CARS. , 2008, , . | | 0 |
| 82 | Single-Pulse Femtosecond Coherent Anti-Stokes Raman Scattering Temperature Measurements Using a Chirped-Pulse Probe Beam. , 2009, , . | | 0 |
| 83 | Effects of Molecular Interference on Femtosecond-CARS Spectroscopy. , 2010, , . | | 0 |
| 84 | Chirped-Probe-Pulse Femtosecond Coherent Anti-Stokes Raman Scattering for Single-Laser-Pulse Flame Temperature Measurements. , 2010, , . | | 0 |
| 85 | Theory of Chirped-Probe Pulse Single-Shot Femtosecond Coherent Anti-Stokes Raman Scattering Thermometry in Flames at 1000 Hz. , 2010, , . | | 0 |
| 86 | Study of Swirl Stabilized Burner with Interchangeable Swirler Using Chirped-Probe-Pulse Femtosecond Coherent Anti-Stokes Raman Scattering for Thermometry and CH4 Concentration Measurements. , 2015, , . | | 0 |