

Complete Publication List of Christopher S. Goldenstein

TEXT BOOKS

1. R.K. Hanson, R.M. Spearrin, **C.S. Goldenstein**, *Spectroscopy and Optical Diagnostics for Gases*, Springer International Publishing AG Switzerland (2016)

PEER REVIEWED & ARCHIVAL JOURNAL PUBLICATIONS

1. R.D. Rockwell, C.P. Goyne, W. Haw, J.C. McDaniel, **C.S. Goldenstein**, I.A. Schultz, J.B. Jeffries, R.K. Hanson, Measurement of water vapor levels for investigating vitiation effects on scramjet performance, *J. Propuls. Power.* 27 (2011) 1315-1317.
2. **C.S. Goldenstein**, J.B. Jeffries, R.K. Hanson, Diode laser measurements of linestrength and temperature-dependent lineshape parameters of H₂O-, CO₂-, and N₂-perturbed H₂O transitions near 2474 and 2482 nm, *J. Quant. Spectrosc. Radiat. Transf.* 130 (2013) 100-111
3. **C.S. Goldenstein**, I.A. Schultz, J.B. Jeffries, R.K. Hanson, A two-color absorption spectroscopy strategy for measuring the column density and path-average temperature of the absorbing species in nonuniform gases, *Appl. Opt.* 52 (2013) 7950-7962.
4. R.M. Spearrin, **C.S. Goldenstein**, J.B. Jeffries, R.K. Hanson, Fiber-coupled 2.7 μm laser absorption sensor for CO₂ in harsh combustion environments, *Meas. Sci. Technol.* 24 (2013) 055107.
5. K. Sun, X. Chao, R. Sur, **C.S. Goldenstein**, J.B. Jeffries, R.K. Hanson, Analysis of calibration-free wavelength-scanned modulation spectroscopy for practical gas sensing using tunable diode lasers, *Meas. Sci. Technol.* 24 (2013) 125203.
6. **C.S. Goldenstein**, C.L. Strand, I.A. Schultz, K. Sun, J.B. Jeffries, R.K. Hanson, Fitting of calibration-free scanned-wavelength-modulation spectroscopy spectra for determination of gas properties and absorption lineshapes, *Appl. Opt.* 53 (2014) 356-367.
7. **C.S. Goldenstein**, R.M. Spearrin, J.B. Jeffries, R.K. Hanson, Wavelength-modulation spectroscopy near 2.5 μm for H₂O and temperature in high-pressure and -temperature gases, *Appl. Phys. B.* 116 (2014) 705-716
8. **C.S. Goldenstein**, I.A. Schultz, R.M. Spearrin, J.B. Jeffries, R.K. Hanson, Scanned-wavelength-modulation spectroscopy near 2.5 μm for H₂O and temperature in a hydrocarbon-fueled scramjet combustor, *Appl. Phys. B.* 116 (2014) 717-727.
9. **C.S. Goldenstein**, R.M. Spearrin, I.A. Schultz, J.B. Jeffries, R.K. Hanson, Wavelength-modulation spectroscopy near 1.4 μm for measurements of H₂O and temperature in high-pressure and -temperature gases, *Meas. Sci. Technol.* 25 (2014) 055101.
10. **C.S. Goldenstein**, R.M. Spearrin, J.B. Jeffries, R.K. Hanson, Infrared laser absorption sensors for multiple performance parameters in a detonation combustor, *Proc. Combust. Inst.* 35 (2015) 3739-3747
11. **C.S. Goldenstein**, C. A. Almodovar, J.B. Jeffries, R.K. Hanson, and C.M. Brophy, High-bandwidth scanned-wavelength-modulation spectroscopy sensors for temperature and H₂O in a rotating detonation engine, *Meas. Sci. Technol.* 25 (2014) 105104.
12. I.A. Schultz, **C.S. Goldenstein**, J.B. Jeffries, R.K. Hanson, R.D. Rockwell, C.P. Goyne, Diode laser absorption sensor for combustion progress in a model scramjet, *J. Propuls. Power.* 30 (2014) 550-557
13. R.M. Spearrin, **C.S. Goldenstein**, J.B. Jeffries, R.K. Hanson, Quantum cascade laser absorption sensor for carbon monoxide in high-pressure gases using wavelength modulation spectroscopy, *Appl. Opt.* 53 (2014) 1938-1946
14. I.A. Schultz, **C.S. Goldenstein**, J.B. Jeffries, R.K. Hanson, R.D. Rockwell, C.P. Goyne, Spatially-resolved water measurements in a scramjet combustor using diode laser absorption, *J. Propuls. Power.* 30 (2014) 1551-1558

15. I.A. Schultz, **C.S. Goldenstein**, C.L. Strand, J.B. Jeffries, R.K. Hanson, C.P. Goynes, Hypersonic scramjet testing via diode laser absorption in a reflected shock tunnel, *J. Propuls. Power.* 30 (2014) 1586-1594.
16. I.A. Schultz, **C.S. Goldenstein**, M. Spearrin, J.B. Jeffries, R.K. Hanson, Multispecies mid-infrared absorption measurements in a hydrocarbon-fueled scramjet combustor, *J. Propuls. Power.* 30 (2014) 1595-1604
17. M. Campbell, S. Wang, **C.S. Goldenstein**, R.M. Spearrin, A. Tulgestke, L. Zaczek, D.F. Davidson, R.K. Hanson, Constrained reaction volume shock tube study of normal heptane oxidation: Ignition delay times, species time histories, and temperature profiles, *Proc. Combust. Inst.* 35 (2015) 231-239
18. R.M. Spearrin, **C.S. Goldenstein**, I.A. Schultz, J.B. Jeffries and R.K. Hanson, Simultaneous sensing of temperature, CO and CO₂ in a scramjet combustor using quantum cascade laser absorption spectroscopy, *Appl. Phys. B*, 117 (2014) 689-698
19. C.H. Smith, **C.S. Goldenstein**, and R.K. Hanson, A scanned-wavelength-modulation absorption spectroscopy sensor for temperature and H₂O in low-pressure flames, *Meas. Sci. Technol.* 25 (2014) 115501.
20. **C.S. Goldenstein** and R.K. Hanson, Diode-laser measurements of linestrength and temperature-dependent lineshape parameters for H₂O transitions near 1.4 μm using Voigt, Rautian, Galatry, and speed-dependent profiles, *J. Quant. Spectrosc. Radiat. Transf.* 152 (2015) 127-139
21. **C.S. Goldenstein**, V.A. Miller and R.K. Hanson, Infrared planar laser-induced fluorescence with a CW quantum-cascade laser for spatially resolved CO₂ and gas properties, *Appl. Phys. B*. 120 (2015), 185-199
22. M. Nations, S. Wang, **C.S. Goldenstein**, K. Sun, D.F. Davidson, J.B. Jeffries, and R.K. Hanson, Shock-tube measurements of excited oxygen atoms using cavity-enhanced absorption spectroscopy, *Appl. Opt.*, 54 (2015), 8766-8775
23. **C.S. Goldenstein**, R.M. Spearrin, and R.K. Hanson, Fiber-coupled diode-laser sensors for calibration-free stand-off measurements of gas temperature, pressure, and composition, *Appl. Opt.*, 55 (2016), 479-484
24. W.Y. Peng, **C.S. Goldenstein**, R.M. Spearrin, J.B. Jeffries, and R.K. Hanson, A single-ended mid-infrared laser-absorption sensor for simultaneous *in situ* measurements of H₂O, CO₂, CO, and temperature in combustion flows, *Appl. Opt.*, 55 (2016), 9347-9359
25. M.N. Martin, S. Wang, **C.S. Goldenstein**, D.F. Davidson, and R.K. Hanson, Kinetics of excited oxygen formation in shock-heated O₂-Ar mixtures, *J. Phys. Chem.*, 120 (2016), 8234-8243
26. **C.S. Goldenstein**, R.M. Spearrin, J.B. Jeffries, and R.K. Hanson, Infrared laser-absorption sensing for combustion gases, *Prog. Energy Combust. Sci.*, 60 (2016), 132-176
27. J.J. Girard, R.M. Spearrin, **C.S. Goldenstein**, and R.K. Hanson, Compact optical probe for flame temperature and carbon dioxide using interband cascade laser absorption near 4.2 μm , *Combust. Flame*, 178 (2017) 158-167
28. **C.S. Goldenstein**, V.A. Miller, R.M. Spearrin, and C.L. Strand, SpectraPlot.com: Integrated spectroscopic modeling of atomic and molecular gases, *J. Quant. Spectrosc. Radiat. Transf.* 200 (2017) 249-257

CONFERENCE PUBLICATIONS

1. **C.S. Goldenstein**, I.A. Schultz, J.B. Jeffries, R.K. Hanson, Tunable diode laser absorption sensor for measurements of temperature and water concentration in supersonic flows, in: 49th *AIAA Aerosp. Sci. Meet.*, AIAA 2011-1094 (2011).
2. I.A. Schultz, **C.S. Goldenstein**, J.B. Jeffries, R.K. Hanson, Tunable diode laser diagnostic for scramjet combustion flows, in: *7th US National Meeting of the Combustion Institute*, Atlanta, CA, 2011.

3. **C.S. Goldenstein**, I.A. Schultz, J.B. Jeffries, R.K. Hanson, TDL absorption sensor for temperature measurements in high-pressure and high-temperature gases, in: *50th AIAA Aerosp. Sci. Meet.*, AIAA 2012-1061 (2012).
4. I.A. Schultz, **C.S. Goldenstein**, J.B. Jeffries, R.K. Hanson, TDL absorption sensor for in situ determination of combustion progress in scramjet ground testing, in: *28th Aerodyn. Meas. Technol. Gr. Testing, Flight Test. Conf.*, AIAA 2012-2654 (2012).
5. R.M. Spearrin, **C.S. Goldenstein**, J.B. Jeffries, R.K. Hanson, Mid-infrared laser absorption diagnostics for detonation studies, in: *29th Int. Symp. Shock Waves*, Madison, (2013).
6. **C.S. Goldenstein**, I.A. Schultz, R.M. Spearrin, J.B. Jeffries, R.K. Hanson, Diode laser measurements of temperature and H₂O for monitoring pulse detonation combustor performance, in: *24th Int. Colloq. Dyn. Explos. React. Syst.*, Taiwan, (2013).
7. I.A. Schultz, **C.S. Goldenstein**, C.L. Strand, J.B. Jeffries, R.K. Hanson, C.P. Goyne, Hypersonic scramjet testing via TDLAS measurements of temperature and column density in a reflected shock tunnel, in: *52nd Aerospace Sciences Meeting*, AIAA 2014-0389 (2014).
8. I.A. Schultz, **C.S. Goldenstein**, J.B. Jeffries, R.K. Hanson, R.D. Rockwell, C.P. Goyne, Spatially-resolved TDLAS measurements of temperature, H₂O column density, and velocity in a direct-connect scramjet combustor, in: *52nd Aerospace Sciences Meeting*, AIAA 2014-1241 (2014).
9. **C.S. Goldenstein**, G.C. Mathews, and Y. Zhou, Single-ended infrared laser-absorption sensing of gas properties, in: *OSA Advanced Photonics Congress*, New Orleans, LA, (2017)
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