

# R Mitchell Spearrin

## List of Publications by Year in descending order

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Version: 2024-02-01

24  
papers

1,157  
citations

623734

14  
h-index

677142

22  
g-index

24  
all docs

24  
docs citations

24  
times ranked

589  
citing authors

#	ARTICLE	IF	CITATIONS
1	Concentrated solar-thermal methane pyrolysis in a porous substrate: Yield analysis via infrared laser absorption. Proceedings of the Combustion Institute, 2023, 39, 5581-5589.	3.9	3
2	Solar-thermal Production of Graphitic Carbon and Hydrogen via Methane Decomposition. Energy & Fuels, 2022, 36, 3920-3928.	5.1	17
3	Hypergolic Continuous Detonation with Space-Storable Propellants and Additively Manufactured Injector Design. Journal of Spacecraft and Rockets, 2022, 59, 1332-1341.	1.9	5
4	Exploiting line-mixing effects for laser absorption spectroscopy at extreme combustion pressures. Proceedings of the Combustion Institute, 2021, 38, 1685-1693.	3.9	11
5	Volumetric laser absorption imaging of temperature, CO and CO <sub>2</sub> in laminar flames using 3D masked Tikhonov regularization. Combustion and Flame, 2021, 224, 239-247.	5.2	25
6	Competitive oxidation of methane and C <sub>2</sub> hydrocarbons discerned by isotopic labeling and laser absorption spectroscopy of CO isotopologues in shock-heated mixtures. Combustion and Flame, 2021, 224, 54-65.	5.2	7
7	Robust cepstral analysis at variable wavelength scan depth for narrowband tunable laser absorption spectroscopy. Measurement Science and Technology, 2021, 32, 045502.	2.6	11
8	Methane-oxygen rotating detonation exhaust thermodynamics with variable mixing, equivalence ratio, and mass flux. Aerospace Science and Technology, 2021, 113, 106683.	4.8	22
9	Swirl injection in hybrid polymethylmethacrylate combustion assessed by thermochemical imaging. , 2021, , .		1
10	Localized characteristic velocity (c*) for rocket combustion analysis based on gas temperature and composition via laser absorption spectroscopy. Measurement Science and Technology, 2021, 32, 125203.	2.6	5
11	Injector Effects on Hybrid Polymethylmethacrylate Combustion Assessed by Thermochemical Tomography. Journal of Propulsion and Power, 2021, 37, 928-943.	2.2	7
12	MHz laser absorption spectroscopy via dplexed RF modulation for pressure, temperature, and species in rotating detonation rocket flows. Applied Physics B: Lasers and Optics, 2020, 126, 1.	2.2	59
13	In-situ thermochemical analysis of hybrid rocket fuel oxidation via laser absorption tomography of CO, CO <sub>2</sub> , and H <sub>2</sub> O. Experiments in Fluids, 2020, 61, 1.	2.4	15
14	Line mixing and broadening of carbon dioxide by argon in the ν <sub>3</sub> bandhead near 4.2 μm at high temperatures and high pressures. Journal of Quantitative Spectroscopy and Radiative Transfer, 2020, 253, 107135.	2.3	22
15	Interband cascade laser absorption of hydrogen chloride for high-temperature thermochemical analysis of fire-resistant polymer reactivity. Applied Optics, 2020, 59, 2141.	1.8	10
16	Single-ended mid-infrared laser-absorption sensor for time-resolved measurements of water concentration and temperature within the annulus of a rotating detonation engine. Proceedings of the Combustion Institute, 2019, 37, 1435-1443.	3.9	44
17	Cross-band infrared laser absorption of carbon monoxide for thermometry and species sensing in high-pressure rocket flows. Applied Physics B: Lasers and Optics, 2019, 125, 1.	2.2	16
18	Line mixing and broadening in the ν(1 <sup>st</sup> 3) first overtone bandhead of carbon monoxide at high temperatures and high pressures. Journal of Quantitative Spectroscopy and Radiative Transfer, 2019, 239, 106636.	2.3	30

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19	Wavelength modulation spectroscopy near $5\hat{\text{A}}^{\mu\text{m}}$ for carbon monoxide sensing in a high-pressure kerosene-fueled liquid rocket combustor. Applied Physics B: Lasers and Optics, 2018, 124, 1.	2.2	30
20	Tomographic laser absorption imaging of combustion species and temperature in the mid-wave infrared. Optics Express, 2018, 26, 20944.	3.4	56
21	Mid-infrared laser absorption tomography for quantitative 2D thermochemistry measurements in premixed jet flames. Applied Physics B: Lasers and Optics, 2018, 124, 1.	2.2	51
22	Infrared laser-absorption sensing for combustion gases. Progress in Energy and Combustion Science, 2017, 60, 132-176.	31.2	471
23	Spectroscopy and Optical Diagnostics for Gases. , 2016, , .		196
24	Infrared laser absorption sensors for multiple performance parameters in a detonation combustor. Proceedings of the Combustion Institute, 2015, 35, 3739-3747.	3.9	43