



## Jesse Streicher

Affiliate, Mechanical Engineering - Thermosciences

### Bio

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#### ACADEMIC APPOINTMENTS

- Physical Science Research Scientist, Mechanical Engineering

### Publications

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#### PUBLICATIONS

- **Experimental Measurement of the Rate Coefficient for OCS + M, with M = Ar, He, N<sub>2</sub>, CO<sub>2</sub> in a Shock Tube Using Laser Absorption Spectroscopy.** *The journal of physical chemistry. A*  
Panda, A., Biswas, P. A., Simitz, L. V., Streicher, J. W., Strand, C. L., Hanson, R. K.  
2026
- **Laser Absorption Spectroscopy Studies of the Cyano Radical for Titan Entry Kinetics** *JOURNAL OF THERMOPHYSICS AND HEAT TRANSFER*  
Chang, E., Merrell, D. P., Streicher, J. W., Hanson, R. K.  
2026
- **Vibrational-state-resolved relaxation and chemistry of carbon monoxide and nitrogen mixtures from 2000-10 250 K probing carbon monoxide in the ground to twelfth excited vibrational levels (vol37, 096112 , 2025)** *PHYSICS OF FLUIDS*  
Streicher, J. W., Merrell, D. P., Strand, C. L., Hanson, R. K., Aiken, T. T., Andrienko, D. A., Boyd, I. D.  
2025; 37 (12)
- **Ring-amplified shock tube for variable-gain, multi-wavelength absorption spectroscopy** *OPTICS EXPRESS*  
Strand, C. L., Merrell, D., Thoeny, A., Streicher, J. W., Hanson, R. K.  
2025; 33 (20): 42653-42676
- **Vibrational-state-resolved relaxation and chemistry of carbon monoxide and nitrogen mixtures from 2000-10 250 K probing carbon monoxide in the ground to twelfth excited vibrational levels** *PHYSICS OF FLUIDS*  
Streicher, J. W., Merrell, D. P., Strand, C. L., Hanson, R. K., Aiken, T. T., Andrienko, D. A., Boyd, I. D.  
2025; 37 (9)
- **A laser-absorption diagnostic for O<sub>2</sub> concentration and temperature using a portable, tunable UV laser system** *APPLIED PHYSICS B-LASERS AND OPTICS*  
Barnes, S. C., Clees, S., Vandervort, J. A., Rault, T. M., Streicher, J. W., Strand, C. L., Hanson, R. K.  
2025; 131 (4)
- **Measurements of high-temperature H<sub>2</sub> laminar flame speeds across a wide range of pressure and Ar dilution for improved comparative evaluation of chemical kinetic models** *INTERNATIONAL JOURNAL OF HYDROGEN ENERGY*  
Figueroa-Labastida, M., Zheng, L., Streicher, J. W., Hanson, R. K.  
2025; 102: 411-429
- **Development and demonstration of a two-color nitric oxide vibrational temperature diagnostic using spectrally-resolved ultraviolet laser absorption** *JOURNAL OF QUANTITATIVE SPECTROSCOPY & RADIATIVE TRANSFER*

- Barnes, S. C., Streicher, J. W., Krish, A., Hanson, R. K.  
2025; 332
- **A shock tube study of chaperon efficiencies for the  $\text{NH}_3+\text{M}-\text{NH}_2+\text{H} + \text{M}$  reaction during ammonia pyrolysis** *PROCEEDINGS OF THE COMBUSTION INSTITUTE*  
Simha, P., Rault, T. M., Clees, S., Streicher, J. W., Strand, C. L., Hanson, R. K.  
2025; 41
  - **Shock Tube ARAS Measurements of  $\text{N}(\text{N}_2)$  and  $\text{N}(\text{N}_2)$  in 5100K to 6400K Nitrogen-Argon Mixtures**  
Granowitz, Z. N., Drescher, D., Merrell, D. P., Streicher, J. W., Strand, C. L., Hanson, R. K., AIAA  
AMER INST AERONAUTICS & ASTRONAUTICS.2025
  - **Experimental and computational assessment of  $\text{O}_2$  and NO individual vibrational states in reflected shock flows**  
Andrienko, D. A., Boyd, I. D., Streicher, J. W., Hanson, R. K., AIAA  
AMER INST AERONAUTICS & ASTRONAUTICS.2025
  - **Effect of elevated temperatures (550-860 K) on the laminar flame speeds of methane/hydrogen blends** *FUEL*  
Figueroa-Labastida, M., Zheng, L., Streicher, J. W., Hanson, R. K.  
2024; 372
  - **Experimental measurements of  $n$ -heptane flame speeds behind reflected shock waves with variable extents of pre-flame auto-ignition chemistry** *COMBUSTION AND FLAME*  
Zheng, L., Figueroa-Labastida, M., Streicher, J. W., Ferris, A. M., Hanson, R. K.  
2024; 266
  - **Ammonia/hydrogen laminar flame speed measurements at elevated temperatures** *INTERNATIONAL JOURNAL OF HYDROGEN ENERGY*  
Figueroa-Labastida, M., Zheng, L., Streicher, J. W., Hanson, R. K.  
2024; 63: 1137-1146
  - **High-temperature laminar flame speed measurements of ammonia/ methane blends behind reflected shock waves** *COMBUSTION AND FLAME*  
Figueroa-Labastida, M., Zheng, L., Streicher, J. W., Hanson, R. K.  
2024; 261
  - **Measurements of methane laminar flame speeds at temperatures up to 1320 K** *COMBUSTION AND FLAME*  
Figueroa-Labastida, M., Zheng, L., Streicher, J. W., Hanson, R. K.  
2024; 261
  - **Measurements and a new correlation of methanol laminar flame speeds at temperatures up to 916 K and elevated pressures behind reflected shock waves** *PROCEEDINGS OF THE COMBUSTION INSTITUTE*  
Zheng, L., Figueroa-Labastida, M., Streicher, J., Hanson, R. K.  
2024; 40 (1-4)
  - **Evaluation of thermal relaxation and extinction of nitric oxide via a master equation model**  
Andrienko, D. A., Boyd, I. D., Streicher, J. W., Hanson, R. K., AIAA  
AMER INST AERONAUTICS & ASTRONAUTICS.2024
  - **Vibrational-State-Resolved Oxygen and Nitric Oxide Time-History Measurements in Shock-Heated, High-Temperature Air**  
Streicher, J. W., Barnes, S. C., Krish, A., Hanson, R. K., AIAA  
AMER INST AERONAUTICS & ASTRONAUTICS.2024
  - **Demonstration of UV Rotational, Vibrational Temperature and Speciation Diagnostics for the Cyano-Radical in Methane-Nitrogen Mixtures**  
Merrell, D. P., Chang, E., Krish, A., Finch, P. M., Streicher, J. W., Hanson, R. K., AIAA  
AMER INST AERONAUTICS & ASTRONAUTICS.2024
  - **Spectroscopic modeling and measurements of the CN Violet and Red systems for the development of nonequilibrium temperature and speciation diagnostics** *JOURNAL OF QUANTITATIVE SPECTROSCOPY & RADIATIVE TRANSFER*  
Krish, A., Finch, P. M., Merrell, D. P., Streicher, J. W., Hanson, R. K.  
2023; 311

- **Laser absorption study of the  $N_2 + O \rightarrow NO$  plus  $N$  and  $NO$  plus  $O \rightarrow O_2 + N$  Zeldovich reactions in shock-heated  $N_2O$  mixtures** *PHYSICS OF FLUIDS*  
Streicher, J. W., Krish, A., Hanson, R. K.  
2023; 35 (4)
- **Shock-Tube Measurements of Atomic Nitrogen Collisional Excitation in 8000-12000 K Partially Ionized Nitrogen-Argon Mixtures.** *The journal of physical chemistry. A*  
Finch, P. M., Granowitz, Z. N., Streicher, J. W., Krish, A., Strand, C. L., Hanson, R. K.  
2023
- **Application of Reflected Shock Wave Configuration to Validate Nonequilibrium Models of Reacting Air** *JOURNAL OF THERMOPHYSICS AND HEAT TRANSFER*  
Gimelshein, S. F., Streicher, J. W., Krish, A., Hanson, R. K., Wysong, I. J.  
2022
- **High-temperature vibrational relaxation and decomposition of shock-heated nitric oxide. I. Argon dilution from 2200 to 8700 K** *PHYSICS OF FLUIDS*  
Streicher, J. W., Krish, A., Hanson, R. K.  
2022; 34 (11)
- **High-temperature vibrational relaxation and decomposition of shock-heated nitric oxide: II. Nitrogen dilution from 1900 to 8200 K** *PHYSICS OF FLUIDS*  
Streicher, J. W., Krish, A., Hanson, R. K.  
2022; 34 (11)
- **Spectrally-resolved ultraviolet absorption measurements of shock-heated NO from 2000 K to 6000 K for the development of a two-color rotational temperature diagnostic** *JOURNAL OF QUANTITATIVE SPECTROSCOPY & RADIATIVE TRANSFER*  
Krish, A., Streicher, J. W., Hanson, R. K.  
2022; 280
- **Spectrally-resolved absorption cross-section measurements of shock-heated O-2 for the development of a vibrational temperature diagnostic** *JOURNAL OF QUANTITATIVE SPECTROSCOPY & RADIATIVE TRANSFER*  
Krish, A., Streicher, J. W., Hanson, R. K.  
2021; 270
- **Coupled vibration-dissociation time-histories and rate measurements in shock-heated, nondilute O-2 and O-2-Ar mixtures from 6000 to 14000K** *PHYSICS OF FLUIDS*  
Streicher, J. W., Krish, A., Hanson, R. K.  
2021; 33 (5)
- **Vibrational relaxation time measurements in shock-heated oxygen and air from 2000 K to 9000 K using ultraviolet laser absorption** *PHYSICS OF FLUIDS*  
Streicher, J. W., Krish, A., Hanson, R. K.  
2020; 32 (8)
- **Shock-tube measurements of coupled vibration-dissociation time-histories and rate parameters in oxygen and argon mixtures from 5000 K to 10 000 K** *PHYSICS OF FLUIDS*  
Streicher, J. W., Krish, A., Hanson, R. K., Hanquist, K. M., Chaudhry, R. S., Boyd, I. D.  
2020; 32 (7)
- **Ultraviolet absorption cross-section measurements of shock-heated O-2 from 2,000-8,400 K using a tunable laser** *JOURNAL OF QUANTITATIVE SPECTROSCOPY & RADIATIVE TRANSFER*  
Krish, A., Streicher, J. W., Hanson, R. K.  
2020; 247
- **A comparative laser absorption and gas chromatography study of low-temperature n-heptane oxidation intermediates** *PROCEEDINGS OF THE COMBUSTION INSTITUTE*  
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2019; 37 (1): 249–57