

## Publikationsliste in begutachteten Zeitschriften

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### 2020

*Assessing multi-regime combustion in a novel burner configuration with large eddy simulations using tabulated chemistry*

Proceedings of the Combustion Institute, 2020

S. Popp, S. Hartl, D. Butz, D. Geyer, A. Dreizler, L. Vervisch, C. Hasse

*Flame structure analysis of turbulent premixed/stratified flames with H<sub>2</sub> addition considering differential diffusion and stretch effects*

Proceedings of the Combustion Institute, 2020

X. Wen, S. Hartl, A. Dreizler, J. Janicka, C. Hasse

*Combustion regime identification from machine learning trained by Raman/Rayleigh line measurements*

Combustion and Flame, Volume 219, 2020, Pages 268 – 274

K. Wan, S. Hartl, L. Vervisch, P. Domingo, R.S. Barlow, C. Hasse

*Derivation and analysis of two-dimensional composition space equations for multi-regime combustion using orthogonal coordinates*

Combustion and Flame, Volume 218, 2020, Pages 205 - 217

A. Scholtissek, S. Popp, S. Hartl, H. Olguin, P. Domingo, L. Vervisch, C. Hasse

*Fuel Effects in Turbulent Premixed Pre-vaporised Alcohol/Air Jet Flames*

Flow, Turbulence and Combustion, 2020, Pages 1573-1987

J. Trabold, S. Hartl, S. Walther, A. Johchi, A. Dreizler, D. Geyer

### 2019

*Numerical and experimental investigation of the laminar burning velocity of biofuels at atmospheric and high-pressure conditions*

Fuel, Volume 247, 2019, Pages 250–256

F. Rau, S. Hartl, C. Hasse

*Assessing an experimental approach for chemical explosive mode and heat release rate using DNS data*

Combustion and Flame, Volume 209, 2019, Pages 214–224

S. Hartl, D. Geyer, C. Hasse, X. Zhao, H. Wang, R. S. Barlow

*Local flame structure analysis in turbulent CH<sub>4</sub>/air flames with multi-regime characteristics*

Combustion and Flame, Volume 210, 2019, Pages 426–438

D. Butz, S. Hartl, S. Popp, S. Walther, R. Barlow, C. Hasse, A. Dreizler, D. Geyer

*Assessing the relative importance of flame regimes in Raman/Rayleigh line measurements of turbulent lifted flames*

Proceedings of the Combustion Institute, Volume 37, 2019, Pages 2297–2305

S. Hartl, R. Van Winkle, D. Geyer, A. Dreizler, G. Magnotti, C. Hasse, R. S. Barlow

### 2018

*Regime identification from Raman/Rayleigh line measurements in partially premixed flames*

Combustion and Flame, Volume 189, 2018, Pages 126–141

S. Hartl, D. Geyer, A. Dreizler, G. Magnotti, R. S. Barlow, C. Hasse

*Flame Structure Analysis and Flamelet/Progress Variable Modelling of DME/Air Flames with Different Degrees of Premixing*  
Flow, Turbulence and Combustion, Volume 102, Issue 3, Pages 757–773  
S. Hartl, D. Messig, F. Fuest, C. Hasse

## 2016

*Development of an Ethanol Combustion Mechanism Based on a Hierarchical Optimization Approach*  
International Journal of Chemical Kinetics, Volume 48, 2016, Pages 423–441  
C. Olm, T. Varga, É. Valkó, S. Hartl, C. Hasse, T. Turányi

## 2015

*A Constrained Control Approach for the Automated Choice of an Optimal Progress Variable for Chemistry Tabulation*  
Flow, Turbulence and Combustion, Volume 94, 2015, Pages 593-617  
U. Prüfert, S. Hartl, F. Hunger, D. Messig, M. Eiermann, C. Hasse

*Flamelet/progress variable modeling of partial oxidation systems: From laboratory flames to pilot-scale reactors*  
Chemical Engineering Science, Volume 134, 2015, Pages 694-707  
M. Vascellari, H. Xu, S. Hartl, F. Hunger, C. Hasse

*LES flamelet-progress variable modeling and measurements of a turbulent partially-premixed dimethyl ether jet flame*  
Combustion and Flame, Volume 162, Issue 8, 2015, Pages 3016-3029  
S. Popp, F. Hunger, S. Hartl, D. Messig, B. Coriton, J. H. Frank, F. Fuest, C. Hasse

*Laminar burning velocity measurements using the Heat Flux method and numerical predictions of iso-octane/ethanol blends for different preheat temperatures*  
Fuel, Volume 140, 2015, Pages 10-16  
F. Rau, S. Hartl, S. Voss, M. Still, C. Hasse, D. Trimis

## 2014

*Determination of laminar burning velocities for lean low calorific H<sub>2</sub>/N<sub>2</sub> and H<sub>2</sub>/CO/N<sub>2</sub> gas mixtures*  
International Journal of Hydrogen Energy, Volume 39, Issue 34, 20 November 2014, Pages 19810-19817  
S. Voss, S. Hartl, C. Hasse

## Vorträge

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### 2019

*Bewertung der lokalen Wärmefreisetzung basierend auf experimentellen Daten*

S. Hartl, S. Popp, D. Butz, A. Dreizler, D. Geyer, R. Barlow, C. Hasse  
29. Deutscher Flammentag, 2019

*Assessing multi-regime combustion characteristics using a novel burner configuration*

S. Hartl, D. Butz, S. Popp, S. Walther, R. Barlow, C. Hasse, A. Dreizler, D. Geyer  
International Conference on Numerical Combustion (ICNC), 2019

### 2018

*Assessing the relative importance of flame regimes in Raman/Rayleigh line measurements of turbulent lifted flames*

S. Hartl, R. Van Winkle, D. Geyer, A. Dreizler, G. Magnotti, C. Hasse, R. S. Barlow  
37th International Symposium on Combustion (ICS), 2018

### 2017

*Eine neuartige Verknüpfung von experimentellen und numerischen Methoden zur Charakterisierung des lokalen Verbrennungsregimes in turbulenten Flammen*

S. Hartl, D. Geyer, A. Dreizler, G. Magnotti, R. S. Barlow, C. Hasse  
28. Deutscher Flammentag, 2017

*Reaction zone detection and characterization from Raman/Rayleigh line measurements in partially premixed flames*

S. Hartl, D. Geyer, A. Dreizler, G. Magnotti, R. S. Barlow, C. Hasse  
US National Combustion Meeting, 2017

### 2016

*Progress Variable and Combustion Regime: Flame Identification and Regime Characterization based on 1D Raman/Rayleigh data*

S. Hartl, D. Geyer, A. Dreizler, R. S. Barlow, C. Hasse  
International Workshop on Measurement and Computation of Turbulent Flames, 2016

### 2015

*Tabulation Strategies of Partially Premixed Dimethyl Ether Flames*

S. Hartl, A. Zschutschke, D. Messig and C. Hasse  
International Conference on Numerical Combustion (ICNC), 2015

### 2014

*How accurate measurements of laminar flames can help for the computation of multidimensional flames*

S. Hartl, S. Popp, A. Zschutschke, C. Hasse  
Heat Flux Burner Workshop, Berlin, 2014

## Konferenzbeiträge

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### 2019

(Poster, Konferenzpaper) *Assessing Heat Release and Chemical Mode Manifold in Multi-Regime Combustion under Experimental Conditions*

S. Hartl, S. Popp, D. Butz, A. Dreizler, D. Geyer, R. Barlow, C. Hasse  
European Combustion Meeting (ECM), 2019

(Poster) *Dual-resolution Raman spectroscopy of HC intermediates in laminar premixed ethanol/air flames*

J. Trabold, P. Durdevic, A. Auernhammer, K. Dieter, K. Koschnick, S. Hartl, A. Dreizler, D. Geyer  
Laser Diagnostics in Energy and Combustion Science, Gordon Research Conference, 2019

(Poster) *Analysis of multi-mode combustion processes based on the reconstruction of thermochemical states from combined 1D-Raman/Rayleigh/CO-LIF experiments*

D. Butz, S. Hartl, S. Popp, R. Barlow, C. Hasse, A. Dreizler, D. Geyer  
Laser Diagnostics in Energy and Combustion Science, Gordon Research Conference, 2019

### 2017

(Poster, Konferenzpaper) *Assessment of reaction mechanisms for a large set of butanol combustion data*

H. Böttler, C. Olm, T. Varga, S. Hartl, M. Pollack, C. Hasse, T. Turányi  
European Combustion Meeting (ECM), 2017

(Poster, Konferenzpaper) *Reaction zone detection and characterization from Raman/Rayleigh line measurements in methane/air flames*

S. Hartl, D. Geyer, A. Dreizler, G. Magnotti, R. S. Barlow, C. Hasse  
European Combustion Meeting (ECM), 2017

### 2016

(Poster) *A gradient-free flame identification and characterization approach for partially premixed and stratified combustion*

S. Hartl, D. Geyer, C. Hasse  
International Workshop on Measurement and Computation of Turbulent Flames, 2016

(Poster) *Development of an ethanol combustion mechanism based on a hierarchical optimization approach*

C. Olm, T. Varga, É. Valkó, S. Hartl, C. Hasse, T. Turányi  
International Combustion Symposium, 2016

(Poster) *Optimization of detailed combustion mechanisms for C1/C2 alcohol and aldehyde fuels*

C. Olm, T. Varga, É. Valkó, S. Hartl, C. Hasse, T. Turányi  
International Combustion Symposium, 2016

### 2015

(Poster, Konferenzpaper) *Influence of detailed chemical mechanisms in the simulation of laminar and turbulent DME flames*

S. Hartl, S. Popp, A. Zschutschke, C. Hasse  
European Combustion Meeting (ECM), 2015

(Poster, Konferenzpaper) *Simulation of partial oxidation processes by using a flamelet/progress variable approach*

S. Hartl, M. Vascellari, H. Xu, C. Hasse

European Combustion Meeting (ECM), 2015

## 2014

(Poster) *Automatized choice of an optimal progress variable for chemistry tabulation – a constrained control approach*

S. Hartl, U. Prüfert, F. Hunger, D. Messig, M. Eiermann, C. Hasse  
International Combustion Symposium, 2014

(Poster) *Measurements and numerical study of laminar burning velocities of iso-butanol and ethanol blends*

F. Rau, S. Hartl, S. Voss, C. Hasse, D. Trimis  
International Combustion Symposium, 2014

(Poster) *Laminar burning velocities of  $C_2H_5OH+O_2$  in different bath gases and an investigation of the general performance of several ethanol combustion mechanisms*

C. Olm, J. Nauc ler, A. A. Konnov, S. Hartl, C. Hasse, F. Rau, T. Tur ny  
International Combustion Symposium, 2014

## 2013

(Poster) *Temperature and dilution effects on the laminar burning velocity of different ethanol/iso-octane blends*

S. Hartl, F. Rau, S. Voss, D. Trimis, C. Hasse  
COST Topical Workshop „Kinetic studies using laminar flames“, 2013

(Poster, Konferenzpaper) *Measurements and numerical study of laminar burning velocities of iso-octane and ethanol blends*

F. Rau, S. Hartl, S. Voss, C. Hasse, D. Trimis  
European Combustion Meeting (ECM), 2013

(Poster) *Numerische und experimentelle Untersuchungen der laminaren Brenngeschwindigkeit von ethanolhaltigen Brennstoffen*

S. Hartl, F. Rau, S. Voss, D. Trimis, C. Hasse  
26. Deutscher Flammentag, 2013