

## Qualifications

Mechanical engineering, Doctor, Laminar burning velocities of methane-hydrogen-air mixtures, Combustion Technology  
Award Date: 22 Oct 2007

## Research outputs

**Modelling of Turbulent Hydrogen Combustion including Preferential Diffusion Effects for Gas Turbine Applications**  
Scheepers, S. N. J., Bastiaans, R. J. M., Hermanns, R. & van Oijen, J. A., Mar 2024, p. 444.

**Analyzing combusted iron powder using 3D x-ray vision**  
Hessels, C., Finotello, G., Mi, X., Hermanns, R. & de Goey, P., 24 Oct 2023.

**Burning Velocity Measurements for Flat Hybrid Iron-Methane-Air Flames**  
Hulsbos, M. R., Hermanns, R., Bastiaans, R. J. M. & de Goey, P., Oct 2023, p. 1-2. 2 p.

**Finding the Burning Velocity of Iron Powder using a v-shaped Flame**  
Prime, H., Shoshyn, Y. L., Hermanns, R. & de Goey, P., 29 Sept 2023.

**Iron Powders as Energy Carrier for Storage and Conversion of Renewables**  
Hermanns, R., Sept 2023.

**Experimental Research On Iron Combustion At Eindhoven University Of Technology**  
Shoshyn, Y. L., Ning, D., Abdallah, M., Finotello, G., Prime, H., Baigmohammadi, M., Prasadha, W., Spee, T., Hermanns, R., Hulsbos, M. R., Bastiaans, R. J. M., Hameete, J., Dam, N. J., Homan, T. A. M., van Rooij, N. E., van Genderen, M. & de Goey, P., 25 Jun 2023, (Accepted/In press) *Experimental Research On Iron Combustion At Eindhoven University Of Technology*.

**Characterising Iron Powder Combustion using an Inverted Bunsen Flame**  
Prime, H., Shoshyn, Y. L., Hermanns, R. & de Goey, P., Apr 2023, *Proceedings of the 11th European Combustion Meeting 2023*. ECM Press, p. 1-5 5 p.

**The Heat Flux Method adapted for hybrid iron-methane-air flames**  
Hulsbos, M. R., Hermanns, R., Bastiaans, R. J. M. & de Goey, P., 2023, *Proceedings of the 11th European Combustion Meeting 2023*. ECM Press, p. 1-6 6 p.

**Laminar burning velocity of hybrid methane-iron air flames**  
Hulsbos, M. R., de Goey, P., Hermanns, R. & Bastiaans, R. J. M., 23 Nov 2022.

**Laminar burning velocity of hybrid methane-iron-air flames**  
Hulsbos, M. R., de Goey, P., Bastiaans, R. J. M. & Hermanns, R., 1 Nov 2022.

**Laminar burning velocity of hybrid methane-iron-air flames**  
Hulsbos, M. R., Hermanns, R., Bastiaans, R. J. M. & de Goey, P., 24 Jul 2022.

**Laminar burning velocity of hybrid methane-iron-air flames**  
Hulsbos, M. R., de Goey, P., Bastiaans, R. J. M. & Hermanns, R., 8 Jun 2022.

**Verbrennung von Pyrolyseöl**  
Möntmann, E., Warkentin, S., Hermanns, R. & Rütten, T., 10 Oct 2019, 2. *Aachener Ofenbau- und Thermoprozess-Kolloquium*. Aachen

**Combustion modelling of Fast Pyrolysis Bio Oil in a residential heating boiler by means of FGM**  
Hermanns, R. & Warkentin, S., 9 Oct 2019, *Combura 2019*. Soesterberg

**Future Fuels für klimaschonende Mobilität und Wärmeerzeugung**

Hermanns, R., 26 Sept 2019, *Proceedings of the 3. Technologieforum „Neue Flüssige Energieträger“*. Hamburg

**Autotherme und Dampf-Reformierung von flüssigen synthetischen Brennstoffen**

Hermanns, R., 17 Sept 2019, *Proceedings of the 29. Deutscher Flammentag*. Bochum

**Autothermal and Steam Reforming of Liquid Synthetic Fuels**

Hermanns, R., 14 Apr 2019, *Proceedings of the European Combustion Meeting 2019*.

Phosphorus fertilising potential of fly ash and effects on soil microbiota and crop

Schönegger, D., Gómez-Brandón, M., Mazzier, T., Insam, H., Hermanns, R., Leijenhorst, E., Bardelli, T. & Fernández-Delgado Juárez, M., 1 Jul 2018, In: *Resources, Conservation and Recycling*. 134, p. 262-270 9 p.

Predictive skeletal kinetic model of biodiesel autoxidation

V, N. P., Kumar, G. H., Mehta, P. S. & Hermanns, R. T. E., 20 Apr 2017, In: *Energy & Fuels*. 31, 4, p. 4333-4342 10 p.

Physical model based reliability analysis for accelerated life testing of a fuel supply system

Pohl, E. & Hermanns, R. T. E., 15 Oct 2016, In: *Fuel*. 182, p. 340-351 12 p.

Degradation modeling of high temperature proton exchange membrane fuel cells using dual time scale simulation

Pohl, E., Maximini, M., Bauschulte, A., Vom Schloß, J. & Hermanns, R. T. E., 1 Feb 2015, In: *Journal of Power Sources*. 275, p. 777-784 8 p.

**Effects of temperature and composition on the laminar burning velocity of CH<sub>4</sub>/H<sub>2</sub>/O<sub>2</sub>/N<sub>2</sub> flames**

Hermanns, R. T. E., Konnov, A. A., Bastiaans, R. J. M., Goey, de, L. P. H., Lucka, K. & Köhne, H., 2009, In: *Fuel*. 89, 1, p. 114-121

**Comparison and evaluation of methods for the determination of flammability limits, applied to methane/hydrogen/air mixtures**

Schoor, van den, F., Hermanns, R. T. E., Oijen, van, J. A., Verplaetsen, F. & Goey, de, L. P. H., 2008, In: *Journal of Hazardous Materials*. 150, 3, p. 573-581

**Analysis of the asymptotic structure of stoichiometric premixed CH<sub>4</sub>-H<sub>2</sub>-air flames**

Goey, de, L. P. H., Hermanns, R. T. E. & Bastiaans, R. J. M., 2007, In: *Proceedings of the Combustion Institute*. 31, 1, p. 1031-1038

**Laminar burning velocities of diluted hydrogen-oxygen-nitrogen mixtures**

Hermanns, R. T. E., Konnov, A. A., Bastiaans, R. J. M. & Goey, de, L. P. H., 2007, In: *Energy & Fuels*. 21, 4, p. 1977-1981

**Laminar burning velocities of methane-hydrogen-air mixtures**

Hermanns, R. T. E., 2007, Eindhoven: Technische Universiteit Eindhoven. 144 p.

**Analysis of the flame thickness of turbulent flamelets in the thin reaction zones regime**

Goey, de, L. P. H., Plessing, T., Hermanns, R. T. E. & Peters, N., 2005, In: *Proceedings of the Combustion Institute*. 30, 1, p. 859-866

**Asymptotic analysis of methane-hydrogen-air mixtures**

Hermanns, R. T. E., Bastiaans, R. J. M. & Goey, de, L. P. H., 2005, *Proceedings of the European Combustion Meeting : Louvain-la-Neuve, Belgium, April 3 - 6, 2005*. Belgium, Louvain-la-Neuve, p. Paper-87

**Burning Velocities of Stoichiometric Methane-Hydrogen-Air Flames at Gasturbine Like Conditions**

Hermanns, R. T. E., Bastiaans, R. J. M. & Goey, de, L. P. H., 2005, *Proceedings of the 20th International colloquium on dynamics of explosions and reactive systems (ICDERS), 31 July - 5 August 2005, Montreal, Canada*. Canada, Montreal, p.

**Analysis of the flame thickness of turbulent flamelets in the thin reaction zones regime**

de Goey, L. P. H., Plessing, T., Hermanns, R. T. E. & Peters, N., 1 Jan 2004, *International Symposium on Combustion, Abstracts of Accepted Papers 2004*. p. 92 1 p.

**Analysis of the laminar burning velocity of methane-hydrogen-air mixtures**

Hermanns, R. T. E., Bastiaans, R. J. M. & Goey, de, L. P. H., 2004, *18th Journées d'Etudes Belgium section of the combustion institute, Louvain-La-Neuve, Belgium, 27 - 28, (2004)*. Vandooren, J. (ed.). Louvain-La-Neuve, Belgium: Combustion Institute, Belgian Section, p. 3p-

**Laminar burning velocities of hydrogen-oxygen-nitrogen mixtures**

Hermanns, R. T. E., Bastiaans, R. J. M. & Goey, de, L. P. H., 2003, *Proceedings of the European Combustion Meeting 2003 (ECM 2003) October 25-28, 2003, France, Orleans*. Koehne, H., Lucka, K., Vovelle, C. & Cheauveau, C. (eds.). s.l.: s.n., p. paper-121

**Laminar burning velocities of methane-hydrogen-air mixtures**

Hermanns, R. T. E., Kortendijk, J. A., Bastiaans, R. J. M. & Goey, de, L. P. H., 2003, *Third European Conference on Small Burner Technology and Heating Equipment : 4. Aachener Kolloquium - Heizwärme aus Ölverbrennung ; Aachen, 18th - 19th September 2003*. Koehne, H. & Lucka, K. (eds.). Aachen: Shaker-Verlag, p. 240-247 (Berichte aus der Verbrennungstechnik; vol. 17).

**Measurements of absolute concentrations of CH in a premixed atmospheric flat flame by cavity ring-down spectroscopy**

Evertsen, R., Oijen, van, J. A., Hermanns, R. T. E., Goey, de, L. P. H. & Meulen, ter, J. J., 2003, In: *Combustion and Flame*. 132, 1-2, p. 34-42

**Measurements of the absolute concentrations of HCO and (CH<sub>2</sub>)-C-1 in a premixed atmospheric flat flame by cavity ringdown spectroscopy**

Evertsen, R., Oijen, van, J. A., Hermanns, R. T. E., Goey, de, L. P. H. & Meulen, ter, J. J., 2003, In: *Combustion and Flame*. 135, 1-2, p. 57-64

**CFD modelling of biogas cofiring in a gas turbine**

Lycklama à Nijeholt, J. A., Komen, E. M. J., Hermanns, R. T. E., de Goey, L. P. H., van Beek, M. C. & Verhage, A. J. L., 1 Dec 2002, *ASME Turbo Expo 2002; Aircraft Engine, Coal, Biomass and Alternative Fuels, Combustion and Fuels, Education, Electric Power, Vehicular and Small Turbomachines*. American Society of Mechanical Engineers, Vol. 1. p. 659-663 5 p.

## Projects

**Center of Excellence in Combustion**

van Oijen, J. A. (Project Manager), Hermanns, R. T. E. (Project member), Sanchez Bahoque, G. (Project member) & Guhathakurta, S. (Project member)  
1/10/20 → 31/12/23

**IDEALFUEL: Lignin as a feedstock for renewable marine fuels**

Somers, L. M. T. (Project Manager), Hermanns, R. T. E. (Project member), Maes, N. C. J. (Project member) & Di Matteo, A. (Project member)  
1/05/20 → 30/04/24

**Living Lab Metal Power**

de Goey, L. P. H. (Project Manager), van Rooij, N. E. (Project member), Shoshyn, Y. L. (Project member), Hermanns, R. T. E. (Project member), Krugers, J.-P. (Project member) & de Goey, L. P. H. (Project member)  
1/09/19 → 31/12/23

**Stable high hydrogen low NO<sub>x</sub> combustion in full scale gas turbine combustor at high firing temperatures 101101462**

van Oijen, J. A. (Project Manager), Bastiaans, R. J. M. (Project member), Hermanns, R. T. E. (Project member), van Dongen, E. M. W. M. (Project member) & Schepers, S. N. J. (Project member)

1/03/23 → 28/02/27

**Towards a full multi-scale understanding of zero-carbon metal fuel combustion**

de Goey, L. P. H. (Project Manager), van Gool, C. E. A. G. (Project member), Thijs, L. C. (Project member), Prime, H. (Project member), Hameete, J. (Project member), Abdallah, M. (Project member), Ramaekers, W. J. S. (Project member) & Hermanns, R. T. E. (Project member)

1/10/20 → 30/09/25

**Vergroening van Gas (VG)2**

de Goey, L. P. H. (Project Manager), Bastiaans, R. J. M. (Project member) & Hermanns, R. T. E. (Project member)

1/10/01 → 31/12/07