

OCTOBER 7 & 8

# COMBURA

NVV  2015

Final Announcement  
& Call for Posters

NVV 



KIVI NIRIA

## GENERAL INTRODUCTION

**The COMBURA symposium is the major annual event for exchange of information on combustion research and its practical applications, in the Netherlands. It is an initiative of the Nederlandse Vlam Vereniging NVV (Netherlands Association for Flame Research) and is sponsored by the Dutch section of the Combustion Institute and the KIVI, section Energy and Heat Technology.**

Participants from universities, research institutes, and industrial companies in the Netherlands and the surrounding countries are invited. At the symposium the latest developments and innovations in advanced combustion research with a clear focus on the potential for application in industry will be presented. In addition, the symposium offers unique chances to expand and maintain your personal network.

COMBURA 2015 will take place at Wednesday 7th of October and Thursday 8th of October 2015. The venue for this event will be the conference hotel Kontakt der Kontinenten in Soesterberg, which is between the cities Utrecht and Amersfoort. Kontakt der Kontinenten is located in an old monastery and surrounded by forest.

### Wednesday 7th of October

The first day of the symposium will start in the late afternoon with the NVV Members Meeting. NVV members will receive a separate invitation for this meeting. After the meeting the COMBURA conference dinner will be served. This dinner is also open to non-NVV members and COMBURA participants are invited to join. After the dinner the bar is open and participants can stay overnight in one of the comfortable hotel rooms.

### Thursday 8th of October

On the second day the opening lecture will be given by **Univ.-Prof. Dr.-Ing. Stefan Pischinger** who is the head of the Institute for Combustion Engines at the Aachen University in Germany.

His keynote is titled: **"Fuel design for low emission engine combustion"**. Professor Stefan Pischinger studied Mechanical Engineering at Aachen Technical University. From 1985 until 1989 he worked as a research assistant at the Sloan Automotive Laboratory at M.I.T. until he received his PhD for his work on Spark Ignition in modern combustion engines. From 1989 until 1997 he was in various positions at Daimler-Benz (today: Daimler) working on Diesel and Gasoline engine development. In his last position he was department leader advanced engineering Diesel engines and Project leader for the new Common Rail V8-Diesel engine. Since 1997 he is Professor at Aachen Technical University and Director of the Institute for Combustion Engines. At the same time he is President and Chief Executive Officer of the FEV Group, a worldwide leading Company for Engineering Services and Test Systems in the field of Combustion Engines and Powertrains. Since 2010 he is member of the North Rhine-Westphalian Academy of Sciences, Humanities and Arts.

After the opening keynote, 20 minutes talks will be given in parallel sessions by experts in the field of combustion research from universities, research institutes and companies.

One of the highlights of the COMBURA symposium will be the presentation of the NVV Combustion Award for the best Master Thesis in the area of combustion technology. The winning young expert will give a lecture about his/her combustion research project. In the poster session "Work in Progress" new research results will be presented. The best three posters will be rewarded with the Combustion Institute Poster Prize

The symposium will be closed by a keynote lecture by **Professor Simone Hochgreb** who is the head of the Reacting Flows group at the University of Cambridge in the United Kingdom. Her key-note lecture is titled: **"Still burning after all these years: better, cleaner, and less"**

Professor Hochgreb obtained her PhD at the department of Mechanical and Aerospace Engineering at Princeton University in 1991. After that she became associated professor at MIT, Cambridge MA, from 1991 to 1999. She was Principal investigator at Sandia National Laboratories (1999-2000) and Managing Engineer at Exponent Inc. (2000-2002), before she became professor at the University of Cambridge in 2002. Since 2011 Professor Hochgreb is a fellow of the Royal Aeronautical Society.

## PROGRAMME DAY 1 - Wednesday 7 October 2015

- 16.00 - 17.00 *Registration and coffee/tea*
- 17.00 - 19.00 *NVV Members Meeting*
- 19.30 - 21.30 *Conference Dinner*
- 21.30 - late *Bar & overnight stay*

## PROGRAMMA DAY 2 - Thursday 8 October 2015

- 9.00 - 9.30 *Registration and coffee /tea*
- 9.30 - 9.45 *Opening and welcome by Joris Koomen*
- 9.45 - 10.30 *Keynote lecture by **Stefan Pischinger** (RWTH Aachen)  
Fuel design for low emission engine combustion*
- 10.30 - 11.00 *Coffee break*



## PARALLEL SESSION 1

### NEW COMBUSTION SYSTEMS / MILD COMBUSTION

◦ 11:00 - 11:20

**Ebrahim Abtahizadeh, Jeroen van Oijen, Rob Bastiaans, Philip de Goey (TU Eindhoven)**  
*LES and DNS of autoignition in the Delft Jet-in-Hot Coflow burner with CH<sub>4</sub>/H<sub>2</sub> fuels*

◦ 11:20 - 11:40

**Likun Ma, Dirk Roekaerts (TU Delft)**  
*Numerical study of MILD spray combustion using OpenFOAM*

◦ 11:40 - 12:00

**Ugur Göktolga, Jeroen van Oijen (TU Eindhoven)**  
*Development of Multi-Stage FGM Approach*

◦ 12:00 - 12:20

**Xu Huang, Dirk Roekaerts (TU Delft)**  
*A preliminary simulation of flameless combustion in a single-burner furnace*

◦ 12:20 - 12:40

**Arvind Gangoli Rao (TU Delft)**  
*Hybrid Combustion System for Future Aero Engines*

◦ 12:40 - 13:30 *Lunch*

◦ 13:30 - 14:15 *NVV Combustion Award*

◦ 14:15 - 15:15 *Poster session "Work in Progress" + coffee/tea*

## PARALLEL SESSION 2:

### INDUSTRIAL AND EXPERIMENTAL COMBUSTION

◦ 11:00 - 11:20

**Stefan Born (Tata Steel)**  
*Research activities on pulverised coal injection into the Blast Furnace*

◦ 11:20 - 11:40

**Naseh Hosseini (TU Eindhoven/Bekaert)**  
*Investigating the Effects of Heat Exchanger Tubes on Flame Transfer Function in a Simplified Boiler*

◦ 11:40 - 12:00

**Harshit Gupta, Joan Teerling (Bekaert Combustion Technology)**  
*Thermo-acoustic modelling in a boiler using FEM*

◦ 12:00 - 12:20

**Bart Venneker (Stork Thermeq)**  
*Lowering the emissions of a waste incinerating boiler using the Stork AFA system*

◦ 12:20 - 12:40

**Robbert Willems, Peter-Christian Bakker, Nico Dam (TU Eindhoven)**  
*Fate of Forgotten Fuel: High-Speed Laser-Induced Incandescence*

## PARALLEL SESSION 3:

### LAMINAR FLAMES

o 15:15 - 15:35

**Nico Speelman, Jeroen van Oijen** (TU Eindhoven), **Nijso Beishuizen** (Bosch)  
*Two-dimensional electric fields in methane-air flames on the heat flux burner*

o 15:35 - 15:55

**Yuriy Shoshin, Rob Bastiaans, Philip de Goey** (TU Eindhoven)  
*Effects of the mixture Lewis number on laminar flame stabilization and blow-off behavior*

o 15:55 - 16:15

**Daniel Mayer** (RWTH-Aachen), **Nijso Beishuizen** (Bosch Thermotechniek), **Heinz Pitsch** (RWTH Aachen)  
*Detailed simulation and flamelet modeling of laminar premixed flames interacting with cold walls*

o 16:15 - 17:00 *Keynote lecture by **Simone Hochgreb** (University of Cambridge)  
Still burning after all these years: better, cleaner, and less*

o 17:00 - 17:15 *Poster prize awards*

o 17:15 - 17:20 *Closure*

o 17:20 - 18:30 *Drinks*

## PARALLEL SESSION 4:

### TURBULENCE-CHEMISTRY-INTERACTION MODELING

o 15:15 - 15:35

**Casper Meijer, Ferry Tap** (Dacolt)  
*Comparison of chemical mechanism, model flame and turbulence-chemistry interaction sub-models in FGM for Diesel combustion*

o 15:35 - 15:55

**Simon Gövert, Jim Kok** (U Twente)  
*Turbulent combustion modeling of a confined premixed methane/air jet flame using tabulated chemistry, RaNS and LES, including heat loss.*

o 15:55 - 16:15

**Giel Ramaekers, Ferry Tap** (Dacolt), **Bendiks Jan Boersma** (TU Delft)  
*On the effect of LES sub-grid models for the opening angle of a swirling jet flow in a model gas-turbine combustor*

## LOCATION

COMBURA 2015 will be held in the conference hotel Kontakt der Kontinenten in Soesterberg, which is surrounded by forest and located in an old monastery between the cities Utrecht and Amersfoort.

- **Conference hotel Kontakt der Kontinenten**  
Amersfoortsestraat 20  
3769 AS Soesterberg

Phone +31 346 351 755

Email [info@kontaktderkontinenten.nl](mailto:info@kontaktderkontinenten.nl)

## CALL FOR POSTERS

Participants from industry, research institutes, universities and others are invited to submit posters with recent research results. If you intend to present a poster, please send the title of your poster to the COMBURA Conference Office ([combura@vlamvereniging.nl](mailto:combura@vlamvereniging.nl)). After acceptance you will be asked to prepare an abstract of the presented research in Word or PDF (maximum of 2 pages) for publication in the Book of Abstracts. **Deadline for submitting posters is September 18th 2015.**

## POSTER PRIZE

For PhD and Master students, a poster prize will be awarded. The prize for the best poster is 150 euro. The second and third prizes will be 100 and 75 euro, respectively. The poster prizes are sponsored by the Dutch section of the Combustion Institute.

## NVV COMBUSTION AWARD

At the COMBURA symposium the NVV Combustion Award 2015 will be presented to the young expert with the best Master Thesis in the field of combustion technology.

## COSTS

- € 10,- for Bachelor/Master/PhD students
- € 50,- for NVV members
- € 70,- for KIVI members
- € 110,- for others
- € 30,- conference dinner
- € 81,- Overnight stay (single room)

## REGISTRATION

Registration can only be done via the following website: [www.vlamvereniging.nl](http://www.vlamvereniging.nl). If you wish to stay overnight please register as soon as possible to make sure that your hotel room is available. Registration fee includes lunch, coffee/tea, drinks and the digital Book of Abstracts.

## ORGANIZING COMMITTEE

- **Joris Koomen**  
Stork Technical Services and Secretary of the Nederlandse Vlam Vereniging
- **Theo van der Meer**  
University of Twente
- **Rob Bastiaans**  
Eindhoven University of Technology and Chairman of the Dutch section of the Combustion Institute

## PROGRAM COMMITTEE

- **Jeroen van Oijen**  
Eindhoven University of Technology and  
Chairman of the Nederlandse Vlam Vereniging
- **Dirk Roekaerts**  
Delft University of Technology
- **Nijso Beishuizen**  
Bosch Thermotechniek

## CONTACT

### **COMBURA conference office**

Sally Kloost-Zimmerman van Woesik  
University of Twente  
Faculty of Engineering Technology  
Laboratory of Thermal Engineering  
P.O. Box 217  
7500 AE Enschede  
The Netherlands

Phone +31-53-4892530

Email [combura@vlamvereniging.nl](mailto:combura@vlamvereniging.nl)

## SPONSORED BY

- Nederlandse Vlam Vereniging
- Dutch Section of the Combustion Institute
- KIVI NIRIA Section Energy and Heat Technology

**NVV6**



KIVI NIRIA