COMBURA’13
COMBUSTION RESEARCH AND APPLICATION

FINAL ANNOUNCEMENT & CALL FOR POSTERS

Vaeshartelt Castle
Maastricht
The Netherlands

OCTOBER 9 & 10
The COMBURA symposium is the major annual event in the Netherlands for exchange of information on combustion research and its practical applications. It is a joint initiative of the Technology Foundation STW (Platform Clean and Efficient Combustion), the Nederlandse Vlam Vereniging NVV (Dutch section of the International Flame Research Foundation IFRF) and the Dutch section of the Combustion Institute. COMBURA 2013 is sponsored by KIVI NIRIA, section Energy and Heat Technology.

This year the COMBURA symposium will be organized for the 12th time. Participants are expected from universities, research institutes, and industrial companies in the Netherlands and the surrounding countries. At this two day 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 2013 will take place at Wednesday 9 October and Thursday 10 October 2013. The venue for this event will be Vaeshartelt Castle, situated just north of Maastricht.

The first day of the symposium is dedicated to the STW-program on Clean Combustion Concepts (CCC). The CCC program aims to support industry in the development of clean and efficient combustion technology. The program is a cooperation of the universities of Eindhoven, Twente, Delft, and Groningen. Furthermore, 14 industrial partners and knowledge institutes are involved in the program. The results from the 8 involved projects on promising future combustion concepts will be highlighted and discussed during the first day of the COMBURA symposium.

A keynote lecture will be given by Dick van der Vecht and/or Frederik Serne. Dick van der Vecht works as Advisor at GDF SUEZ Energie Nederland which is a leading energy player in the Dutch market. In the consumer market, they operate under the brand Electrabbel. Focus of the key lecture will be on CO₂ emissions.

You can find an overview of the projects in the CCC program on the program website: www.cleancombustionconcepts.nl Please also visit this website for other combustion news.

For the second day of the COMBURA symposium two keynote speakers have been invited to give a lecture. The opening keynote lecture will be given by Dr. Tomasz Klajny, the new Operations Manager of the International Flame Research Foundation (IFRF) in Livorno, Italy. Tomasz Klajny joined the IFRF on 1 March 2013. He has a PhD in Engineering from Czestochowa University of Technology, Poland. Recently he worked for Ceres Power, a world leading AIM-quoted alternative energy company developing fuel cell technology and based in the UK. The second keynote speaker is Prof. Heinz Pitsch, head of the Institute for Combustion Technology of RWTH Aachen University. His main research topics are experiments and simulation of combustion in Diesel engines, soot formation, spray penetration and mixture formation of high pressure fuel injection systems, auto ignition in turbulent flows and flame quenching at cold walls.

On the second day, next to the two keynotes, 20 minutes talks will be given in parallel sessions by experts in the field of combustion research from universities, research institutes and companies from the Netherlands and surrounding countries. Session topics in the morning are “Industrial Research” and “Flame Chemistry”. In the afternoon there are session on “Engines and Fuels” and “Other Combustion Research”.

One of the highlights at the second day 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 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.
Day 1

Wednesday 9 October 2013

10.00 – 11.30 NVV Members Meeting
Note: this meeting is no part of the COMBURA symposium

11.30 – 12.00 Registration and coffee

12.00 – 12.15 Opening and welcome by Theo van der Meer

12.15 – 13.00 Keynote lecture Dick van der Vecht and Frederik Serné (GDF SUEZ)
Changes in gas turbine operation regime and its effects on emissions & legislation

13.00 – 13.45 Lunch

CCC project presentations

13.45 – 14.15 flexFLOX - Flameless combustion conditions and efficiency improvement of single- and multi-burner-FLOX furnaces in relation to changes in fuel and oxidizer composition
Project leader: Dirk Roekaerts (Delft University of Technology)
Co-applicants: Wiebren de Jong, Mark Timmers (Delft University of Technology)
Researchers: Luis Arteaga Mendez, Gerasimos Sarras, Eun-Seong Cho, Yasser Mahmoudi Larimi (Delft University of Technology)

14.15 – 14.45 MILDNOX - NO Formation and fuel flexibility in dilute combustion
Project leader: Howard Levinsky (University of Groningen)
Co-applicants: Tolja Mokhov (University of Groningen), Philip de Goey, Jeroen van Oijen (Eindhoven University of Technology)
Researchers: Alexey Sepman (University of Groningen), Ebrahim Abtahizadeh (Eindhoven University of Technology)

14.45 – 15.15 HiTAC - Heavy fuel-oil combustion in a Hitac boiler
Project leader: Theo van der Meer (University of Twente)
Co-applicants: Jim Kok (University of Twente), Dirk Roekaerts, Mark Timmers (Delft University of Technology)
Researchers: Shanglong Zhu (University of Twente), Hugo Rodrigues (Delft University of Technology)

15.15 – 15.45 Poster session CCC projects + coffee/thee

15.45 – 16.15 MoST - Multi-scale modification of swirling combustion for optimized gas turbines
Project leader: Rob Bastiaans (Eindhoven University of Technology)
Co-applicants: Bernard Geurts, Theo van der Meer (University of Twente)
Researchers: Thiago Cardoso de Souza (Eindhoven University of Technology), Anton Verbeek (University of Twente)

16.15 – 16.45 XCiDE - Crossing the combustion modes in Diesel engines
Project leader: Bart Somers (Eindhoven University of Technology)
Co-applicants: Philip de Goey, Nico Dam (Eindhoven University of Technology)
Researchers: Ulas Eguiz, Niels Leermakers (Eindhoven University of Technology)

16.45 – 17.15 ALTAS - Advanced low NOx flexible fuel gas turbine combustion, aero and stationary
Project leader: Rob Bastiaans (Eindhoven University of Technology)
Co-applicants: Jeroen van Oijen, Philip de Goey (Eindhoven University of Technology)
Researchers: Andrea Donini, Sudipto Mukhopadhyay (Eindhoven University of Technology)
17.15 – 17.45  **BiOxyFuel** - Torrefied biomass combustion under oxy-fuel conditions in coal fired power plants  
*Project leader:* Gerrit Brem (University of Twente)  
*Co-applicants:* Theo van der Meer, Bernard Geurts (University of Twente), Philip de Goey, Jeroen van Oijen, Hans Kuerten, Cees van der Geld (Eindhoven University of Technology)  
*Researchers:* Eyerusalem Gucho (University of Twente), Yousef Haseli, Emanuele Russo (Eindhoven University of Technology)

17.45 – 18.15  **ULRICO** - Ultra rich combustion of hydrocarbons and soot formation  
*Project leader:* Jim Kok (University of Twente)  
*Co-applicant:* Dirk Roekaerts (Delft University of Technology)  
*Researchers:* Marc Woolderink (University of Twente), Michael Stöllinger (Delft University of Technology)

18.15  **Closure**

18.15 – 19.00  **Drinks**

19.00 – 21.00  **Conference Dinner**

21.00 – late  **Bar & overnight stay**
Day 2  Thursday 10 October 2013

09.00 – 10.00  Registration and coffee

10.00 – 10.15  Opening and welcome by Theo van der Meer

10.15 – 11.00  Keynote lecture by Dr. Tomasz Klajny (International Flame Research Foundation)

11.00 – 11.30  Coffee break

Parallel session 1  Industrial research

11.30 – 11.50  Pepijn Pronk (Tata Steel)
Application of model predictive control for steel heating furnaces

11.50 – 12.10  Pierre Ploumen (Ploumen Energy Consultancy)
Pulse combustor applied in integrated paper sludge conversion process with drying and sequential combustion

12.10 – 12.30  Bart Venneker (Stork Thermeq)
Towards HITAC conditions in a 9 MW oil fired industrial boiler

Parallel session 2  Flame chemistry

11.30 – 11.50  Likun Ma (Delft University of Technology)
Modeling of Delft ethanol jet-in-hot-coflow flame with tabulated chemistry method

11.50 – 12.10  David Diarra (OIl Oel-Waerme-Institut)
Characterizing ignition behavior of primary reference fuels by numerical stability analysis of detailed reaction mechanisms

12.10 – 12.30  Moresh Wankhede (Dacolt)
Unsteady gas turbine model combustor simulations with FGM

12.30 – 13.15  Lunch

13.15 – 14.00  NVV Combustion Award

14.00 – 15.00  Poster session “Work in Progress“

Parallel session 3  Engines and fuels

15.00 – 15.20  Ferry Tap (Dacolt)
Advanced Diesel engine combustion modeling with Dacolt PSR+PDF

15.20 – 15.40  Peter-Christian Bakker (Eindhoven University of Technology)
Enabling partially premixed combustion using ON70 fuels in the low load regime

15.40 – 16.00  Bas Nijssen (Eindhoven University of Technology)
Experimental investigation of low octane fuel composition effects on load range capacity in partially premixed combustion (PPC)
Parallel session 4  Other combustion research

15.00 – 15.20  Andreas Ortwein (DBFZ Deutsches Biomasseforschungszentrum gemeinnützige GmbH, Leipzig)
CFD in biomass combustion – research activities and challenges

15.20 – 15.40  Jim Kok (University of Twente)
Limit cycles of combustion and pressure oscillations in gas turbine engines: highlights of results by 18 PhD students in the LIMOUSINE project

15.40 – 16.00  Robin Doddema (Eindhoven University of Technology)
How premixed is partially premixed combustion: optical engine experiments to study fuel stratification

16.00 – 16.15  Coffee break

16.15 – 17.00  Keynote lecture by Prof.dr. Heinz Pitsch (RWTH Aachen University)

17.00 – 17.15  Poster prize awards

17.15  Closure

Location

COMBURA 2013 will be held at Vaeshartelt Castle which is located just north of Maastricht. The castle is close to highway A2 and Maastricht-Aachen airport. The conference centre is surrounded by a magnificent English park with several ponds, terraces and beautiful bushes and trees. Vaeshartelt Castle is a conference centre with an all-in-one formula.

Kasteel Vaeshartelt
Weert 9
6222 PG Maastricht

t 043 369 02 00
f 043 362 60 60
info@vaeshartelt.nl
www.vaeshartelt.nl/home/

Call for posters

‘Work in Progress’ will be presented during the poster session. 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 at STW (brand@stw.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 16 September 2013. Deadline for poster abstracts is also 16 September 2013.

Poster prize

For PhD and Master students, a poster prize will be awarded. The prize for the best poster is 250 euro. The second and third prizes will be 150 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 2013 will be presented to the young expert with the best Master Thesis in the field of combustion technology.

Costs

**Registration fee per day**
- free for (master) students
- € 50 for KIVI NIRIA members
- € 100 others

**Optional hotel accommodation (conference night)**
- € 80 single room
- € 110 double room (€ 55 per person)

**Conference dinner on Wednesday 9 October 2013**
- € 20

**Registration after 23 September 2013**
- extra charge of € 40

Registration

Participants may register for one or two days. Overnight stay and conference dinner is optional. Registration is done by filling out the registration form. 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 Book of Abstracts.

**Please register before 23 September 2013**
For registrations after 23 September there is an extra charge of € 40

Information

COMBURA Conference Office
Technology Foundation STW
P.a. Astrid van der Stroom
P.O. Box 3021
3502 GA Utrecht
The Netherlands

t +31 (0)30 600 12 97
f +31 (0)30 601 44 08
brand@stw.nl

Organizing Committee

**Theo van der Meer**
University of Twente and Chairman Platform Clean and Efficient Combustion

**Rob Bastiaans**
Eindhoven University of Technology

**Liselotte Vogels-Verhoeven**
Eindhoven University of Technology

**Joris Koomen**
Stork Technical Services and Secretary of the NVV

**Astrid van der Stroom**
Technology Foundation STW

**Leo Korstanje**
Technology Foundation STW and Secretary Platform Clean and Efficient Combustion

Sponsored by

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