



stw
Technology Foundation STW

COMBURA'11

COMBUSTION
RESEARCH AND
APPLICATION

Final Announcement
& Call for Posters

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&
11

OCTOBER
2011

FINAL ANNOUNCEMENT & CALL FOR POSTERS

REEHORST
EDE
THE NETHERLANDS



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 2011 is sponsored by KIVI NIRIA, section Energy and Heat Technology.

This year we have our second lustrum, the COMBURA symposium will be organised for the 10th time. Participants are expected from universities, research institutes and industrial companies in the Netherlands and the surrounding countries. At the symposium recent developments in advanced combustion research with a clear focus on the potential for application in industry will be presented. The symposium is also an excellent opportunity to expand your personal network.

COMBURA 2011 will last two full days, on Monday 10 October and Tuesday 11 October 2011. The first day will be fully devoted to the 8 research projects within the STW Perspectief Program on Clean Combustion Concepts (CCC). The CCC projects have started in 2009 and are now in full swing. The results from these projects on promising future combustion concepts will be highlighted and discussed during the meeting. Industrial members of CCC Users' Committees are especially welcomed to participate also this first day and join at the conference dinner.

The second COMBURA day will be opened by keynote speaker dr. Rick Harwig, director Strategic Area Energy at Eindhoven University of Technology. The title of his talk is "Preparing for the Energy Transformation".

Dr. Rick Harwig is former Philips CTO. At Philips he was responsible for technology strategy and management, research and intellectual property and standards, new business incubation and applied technologies. He has driven open innovation to become a leading theme within Philips and inspired the emerging High Tech Campus Eindhoven to become a unique open innovation eco-system in Europe and the center of gravity for private R&D and Open Innovation in the Netherlands. Apart from Eindhoven University of Technology he is also active for the North Brabant Development Agency, TiasNimbas Business School, Vlerick Leuven Gent Management School, Netherlands Academy of Technology and Innovation, Prodrive, TNO and the Netherlands Ministry of Economic Affairs, Agriculture and Innovation.

The second keynote speaker is Prof.Dr.-Ing. Henning Bockhorn, director of the Section of Combustion Technology at the Engler-Bunte-Institute at the Karlsruhe Institute of Technology, professor of Chemical Engineering and professor of Combustion Technology. He will close the symposium with a lecture entitled "Computational Combustion - Useful Tools or Useless Toys". In this lecture he will touch the utilization of future fuels for energy conversion and the challenges and needs of computational methods.

His main areas of expertise are: reactive, laminar and turbulent flows and combustion, high temperature reactions in homogeneous or two-phase systems and mathematical modeling; complex chemical reaction systems and turbulence-chemistry-mixing interactions in reacting flows.

In the morning 20-minute talks on "future fuels" and "industrial research" will be given. In the afternoon the topics of the parallel sessions are "engines and gasturbines" and "numeral modeling".

At the symposium the NVV Combustion Award for the best Master Thesis in the area of combustion technology will be presented. 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 Monday, 10 October 2011

10.00 – 10.45

Registration and coffee

10.45 – 11.00

Opening and welcome by Theo van der Meer

Project presentations

11.00 – 11.30

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 Tummer (Delft University of Technology)

Researchers: Luis Arteaga Mendez, Gerasimos Sarras, (Delft University of Technology)

11.30 – 12.00

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)

12.00 – 12.30

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 Tummers (Delft University of Technology)

Researchers: Shanglong Zhu (University of Twente), Hugo Rodrigues (Delft University of Technology)

12.30 – 13.30

Lunch

Project presentations

13.30 – 14.00

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)

14.00 – 14.30

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)

14.30 – 15.00

ULRICO - Ultra Rich Combustion of Hydrocarbons and Soot Formation

Project leader: Jim Kok (University of Twente)

Co-applicant: Dirk Roekaerts (Delft University of Technology)

Researcher: Marc Woolderink (University of Twente), Michael Stoellinger (Delft University of Technology)

15.00 – 15.30

Coffee break

Project presentations

15.30 – 16.00

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)

16.00 – 16.30

XCiDE - Crossing the Combustion modes in Diesel Engines (Somers, De Goey, Dam)

Project leader: Bart Somers (Eindhoven University of Technology)

Co-applicants: Philip de Goey and Nico Dam (Eindhoven University of Technology)

Researchers: Ulas Eguz, Niels Leermakers (Eindhoven University of Technology)

16.30 – 16.45

Closure & conclusions

17.00 – 18.00

Drinks

19.30 – 21.30

Conference dinner

21.30 – late

Bar & overnight stay

Day 2 Tuesday, 11 October 2011

- 08.30 – 09.00 **Registration and coffee**
 09.00 – 09.15 **Opening and welcome by Theo van der Meer**
 09.15 – 10.00 **Keynote lecture by Dr. Rick Harwig**
 director Strategic Area Energy at Eindhoven University of Technology
 “Preparing for the Energy Transformation”
 10.00 – 10.30 **Coffee break**

Parallel session 1 Future fuels

- 10.30 – 10.50 **Koos Blazer** (LNGEurope)
 Business case of small LNG in Europe
 10.50 – 11.10 **Hajo Hoffmann** (OWI Oel-Waerme-Institut)
 Use of n-butanol as biocomponent in domestic heating oil: Parameter study and practical test
 11.10 – 11.30 **Mark Boß** (Dreizler)
 Results and practical experience of co-combustions tests with pyrolysis oil utilising a forced-draught burner system under industrial

Parallel session 2 Industrial research

- 10.30 – 10.50 **Pepijn Pronk** (Tata Steel)
 Increasing the capacity and fuel efficiency of the DSP tunnel furnace in IJmuiden
 10.50 – 11.10 **Martijn van Essen** (KEMA)
 An experimental study of silica particle growth in premixed laminar methane/air flames
 11.10 – 11.30 **Michael Boot** (Eindhoven University of Technology)
 Valorization in the automotive world
 11.30 – 12.30 **Poster session “Work in Progress”**
 12.30 – 13.30 **Lunch & poster session**
 13.30 – 14.00 **NVV Combustion Award**

Parallel session 3 Engines and gas turbines

- 14.00 – 14.20 **Sergey Pancheshnyi** (NEQLab Research)
 Nanosecond-plasma distributed ignition system for lean-burn engines
 14.20 – 14.40 **Jim Kok** (University of Twente)
 Limit cycles of combustion dynamics in gas turbine combustors: the Limousine project
 14.40 – 15.00 **Ron Zeegers** (Eindhoven University of Technology)
 Optical diagnostics on stratified charge compression ignition in a heavy-duty diesel engine

Parallel session 4 Numerical modeling

- 14.00 – 14.20 **Giel Ramaekers** (Eindhoven University of Technology)
 Application of the Flame Surface Density approach to stratified flames: a subfilter analysis
 14.20 – 14.40 **Ferry Tap** (Dacolt)
 Development and validation of an advanced combustion model based on Tabkin and Ansys Fluent
 14.40 – 15.00 **Gerasimos Sarras** (Delft University of Technology)
 Simulation of the Delft Jet-in-hot-coflow burner using transported PDF methods and FGM tabulated chemistry
 15.00 – 15.30 **Coffee break & poster session**
 15.30 – 16.15 **Keynote lecture by Prof.Dr.-Ing. Henning Bockhorn**
 director of the Section of Combustion Technology at the Engler-Bunte-Institute at the Karlsruhe Institute of Technology. “Computational Combustion - Useful Tools or Useless Toys”
 16.15 -16.30 **Poster prize awards**
 16.30 **Closure**

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 (maximum of 2 pages) for publication in the Book of Abstracts.

Deadline for abstracts is 19 September 2011.

Location

COMBURA 2011 will be held in the ReeHorst in Ede, centrally located in the Netherlands and at the heart of the Veluwe region. Easily and quickly accessible from the motorway (A12 and A30) and by train (Ede-Wageningen station, 3 minutes walk). With 700 own parking spaces out front.

Hotel and Congresscentrum the ReeHorst
Bennekomseweg 24
6717 LM EDE (Gelderland)
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www.reehorst.nl

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 2011 will be presented to the young expert with the best Master Thesis in the field of combustion technology.

Costs

Registration fees per day

free for (master) students
40 euro for KIVI NIRIA members
80 euro others

Optional hotel accommodation (conference night)

60 euro single room
80 euro double room (40 euro per person)

Conference dinner on Monday 10 October 2011

20 euro

Registration after 26 September 2011

extra charge of 40 euro

Registration

Participants may register for one or two days. Overnight stay and conference dinner is optional. Registration can only be done via the following website: www.stwplatform.nl/en/combura-2011

and select registration. 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.

Information

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