Invited Speakers

Philippe Dagaut, CNRS Orléans, France
Pascale Desgroux, Université Lille 1, Laboratoire PhysicoChimie de la Combustion, France
Kristina Eisen (née Noack), University of Bremen, Germany
Tiziano Faravelli, Politecnico di Milano, Dipartimento di Chimica, Materiali ed Ingegneria Chimica, Italy
Yiguang Ju, Princeton University, Department of Mechanical and Aerospace Engineering, USA
Pascale Desgroux, Université Lille 1, Laboratoire PhysicoChimie de la Combustion, France
Kristina Eisen (née Noack), University of Bremen, Germany
Tiziano Faravelli, Politecnico di Milano, Dipartimento di Chimica, Materiali ed Ingegneria Chimica, Italy
Yiguang Ju, Princeton University, Department of Mechanical and Aerospace Engineering, USA
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Tiziano Faravelli, Politecnico di Milano, Dipartimento di Chimica, Materiali ed Ingegneria Chimica, Italy
Yiguang Ju, Princeton University, Department of Mechanical and Aerospace Engineering, USA

Scientific Committee

Katharina Kohse-Höinghaus
Physical Chemistry I, Bielefeld University, Germany
Marcus Aldén
Combustion Physics and Center for Combustion Science and Technology, Technical University Lund, Sweden
Mara de Joannon
Istituto di Ricerche sulla Combustione, CNR, Naples, Italy
Christof Schulz
Institute for Combustion and Gas Dynamics and Center for Nanointegration (CENIDE), University of Duisburg-Essen, Germany

Local organization
Physical Chemistry I, Bielefeld University
cdcc2017@uni-bielefeld.de
apl. Prof. Dr. Andreas Brockhinke, Dr. Michael Letzgus, Regine Schröder

Deadlines and Conference fees
Registration:
February 01 to June 16, 2017
Registration until April 15, 2017 (early):
Regular participant: 280 €
Advanced/PhD student: 180 €
Registration after April 15, 2017 (late):
Regular participant: 320 €
Advanced/PhD student: 200 €

Abstract submission:
February 01 to April 15, 2017
Acceptance of posters/contributed talks:
May 08, 2017

Sponsors
German Science Foundation (DFG)
Center for Interdisciplinary Research (ZiF)
German Bunsen Society of Physical Chemistry (DBG)

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Introduction

More than 80% of the global primary energy is supplied by fossil-fuel combustion, resulting in adverse effects on climate, air quality, and health. Because of the scale of the energy needed, a transition towards a renewable energy system will take time. Meanwhile, strategies for clean(er) combustion receive increasing attention.

In a discussion-oriented, interdisciplinary atmosphere, this international meeting will focus on some rapidly emerging and particularly timely issues in combustion research, including increased efficiency, alternative fuels, and pollutant formation. Knowledge from different disciplines must be integrated to understand these issues:

- **Chemistry** to describe the reaction pathways for novel fuels and new efficient combustion strategies,
- **Physics** to monitor the combustion process and identify reactive species with suitable diagnostics, and
- **Engineering** to understand the influence of the boundary conditions of practical combustion processes.

The meeting thus aims to provide forefront interdisciplinary knowledge from different international perspectives to reflect strategies for the future and to form nuclei for joint research activities. The program includes invited lectures by eminent international experts as well as contributed talks, selected from submissions, and poster presentations includes ample time for networking and informal exchange.

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**Preliminary Program**

**Wednesday, June 21**

09:00  Welcome

**Session 1: Cleaner combustion systems:**
- Understanding needs and details

09:15  H. Wang: Soot formation chemistry
10:00  P. Dagaut: Low-temperature chemical kinetics of alternative and conventional fuels oxidation
10:30  Coffee break
11:00  H. Levinsky: Why can’t we just burn hydrogen? Challenges to changing fuels
11:30  P. Desgroux: About the formation of (some) pollutants in combustion processes
12:00  Contributed talks
12:30  Lunch

**Session 2: Combustion applications:**
- Impact and reduction of emissions

14:00  H. Michelsen: Understanding combustion emissions and their impact on climate
14:45  H. Pitsch: Autoignition chemistry and model reduction
15:15  T. Levás: Biofuels for aviation from thermal conversion of biomass, a multi-scale problem
15:45  Coffee break
16:15  Rapid poster talks
16:45  F. Winter: Applied combustion, pyrolysis and gasification
17:15  Discussion and networking
18:30  Posters and Snacks

**Thursday, June 22**

**Session 3: Chemistry for cleaner combustion:**
- Fuels, mechanisms, and aftertreatment

09:15  F. Qi: Advanced synchrotron-based combustion diagnostics
10:00  T. Faravelli: Reaction models for emission prediction
10:30  Coffee break

11:00  Y. Ju: Experiments and models of low temperature combustion of alternative fuels
11:30  J. Mantzaris: Experiments and models for catalytic combustion
12:00  Contributed talks
12:30  Lunch

**Session 4: Physics: Tools and techniques**

14:00  M. Linne: Diagnostics for dense sprays in support of predictive models
14:45  T. Kasper: Diagnostics for combustion and nanoparticle formation
15:15  K. Eisen: Multi-quantity diagnostics for an efficient process design
15:45  Coffee break
16:15  Rapid poster talks
16:45  W. Meier: Multi-species diagnostics at high pressure for gas turbine combustion
17:15  Discussion and networking
18:30  Conference Dinner and Evening Nature Walk

**Friday, June 23**

**Session 5: Discussion**

09:00  Panel discussion on future needs
10:00  Coffee break
10:30  Discussion breakout of participants
11:30  Plenary discussion
12:00  Farewell and meeting adjourn