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## Course Description and Aims

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Advances in various engineering and process applications necessitate better understanding of underlying surface processes or near-wall phenomena in concerning systems. High-temperature material synthesis and processing, engine heat transfer and combustion, and chemical process technology (chemical vapor deposition and infiltration, catalytic processes, etc.) are just a few familiar examples. Thereby processes, such as surface reconstruction, surface material damage, material deposition, film growth and material etching, wall-flame interaction, surface reactions and their coupling with chemically reactive flows, have to be addressed.

The course objective is to provide the participants with today's detailed knowledge on

- Turbulence-Chemistry Interaction
- Chemical Kinetics under low temperature conditions
- Near-Wall Reactive Flow Diagnostics
- Heat-Transfer and Turbulent Multiphase-Flows
- Near-Wall Reactive Flow Applications

The ICISS-Summer School in cooperation with TU Darmstadt is intended to report on the status and perspective of experimental, theoretical, and numerical techniques for understanding, describing, and designing near-wall reactive flows in diverse scientific and engineering fields. It aims furthermore at providing an opportunity for researchers and interested workers to present the state of the art, discuss new challenges and developments, and exchange ideas in the areas of near-wall reactive flows.

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## Who should attend?

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The course is directed towards international graduate students and researchers of mechanical or process engineering, chemistry and physics focusing on the fields of combustion, energy science, turbulent or multiphase flow, fluid mechanics, kinetics, laser diagnostics, thermodynamics or heat transfer.

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## Summer School site

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The summer school is going to take place in the Alleehotel Europa in Bensheim, Germany.

[www.alleehotel.de](http://www.alleehotel.de)

*Europa-Allee 45  
64625 Bensheim  
Germany*

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## Fees and Registration

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The Summer School as well as accommodation, field trips, social events and meals will be free of charge. The costs for traveling are not covered by the summer school.

The application will be available online soon on our website:

[www.rsm.tu-darmstadt.de](http://www.rsm.tu-darmstadt.de)

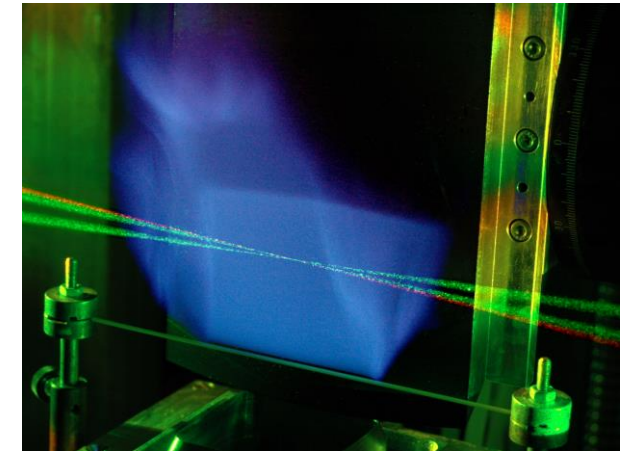
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TECHNISCHE  
UNIVERSITÄT  
DARMSTADT

## International Combustion Institute Summer School on Near-Wall Reactive Flows

6<sup>th</sup> – 10<sup>th</sup> June 2016  
Bensheim, Germany



Offered by the International Combustion Institute in  
cooperation/partnership with



**SFB/Transregio 150**  
Turbulente, chemisch reagierende  
Mehrphasenströmungen in Wandnähe



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## Organizing Committee

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**Prof. Andreas Dreizler**

Technische Universität Darmstadt (Germany)

**Prof. Olaf Deutschmann**

Karlsruhe Institute of Technology (Germany)

**Dr. Andrea Gruber**

SINTEF Energy Research, Trondheim (Norway)

**Prof. Thierry Poinso**

National Polytechnic Institute of Toulouse (France)

**Prof. Amsini Sadiki**

Technische Universität Darmstadt (Germany)

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## Preliminary Program

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### Day 1: Monday, June 6<sup>th</sup> (Introduction)

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- 9:00 Individual arrival and check-in at Alleehotel Europa, Bensheim  
11:30 Lunch  
13:00 Welcome and Introduction to Near-Wall Reactive Flow topics  
15:00 First lecture on Turbulence-Chemistry Interaction near Walls  
19:00 Joint welcome dinner at Alleehotel Europa  
20:30 Poster session I (including short presentations by the students as well as feedback by experienced researchers)
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### Day 2: Tuesday, June 7<sup>th</sup> (Lectures)

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- 7:30 Breakfast  
8:30 First lecture on Chemical Kinetics under low Temperature Conditions  
12:00 Lunch  
12:45 Poster session II  
14:00 First lecture on Near-Wall Reactive Flow Diagnostics  
16:30 First lecture on Heat-Transfer and Turbulent Multiphase-Flows near Walls  
19:00 Open-ended joint dinner and social event
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### Day 3: Wednesday, June 8<sup>th</sup> (Field Trip)

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- 7:30 Breakfast  
8:30 Second lecture on Chemical Kinetics under low Temperature  
12:00 Lunch  
13:00 First lecture on Near-Wall Reactive Flow Applications  
14:30 Field trip  
18:30 Dinner at the Alleehotel Bensheim  
19:30 Poster session III
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### Day 4: Thursday, June 9<sup>th</sup> (Lectures)

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- 7:30 Breakfast  
8:30 Second lecture on Turbulence-Chemistry Interaction near Walls  
12:00 Lunch  
13:00 Second lecture on Heat-Transfer and Turbulent Multiphase-Flows  
14:30 Second lecture on Near-Wall Reactive Flow Diagnostics  
17:30 Second lecture on Near-Wall Reactive Flow Applications  
19:00 Social event and dinner
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### Day 5: Friday, June 10<sup>th</sup> (Lab tour)

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- 7:30 Breakfast  
8:30 Tour to the combustion and heat-transfer laboratories of the TU Darmstadt  
12:00 Individual departure
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## Further information & Contact

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[www.rsm.tu-darmstadt.de](http://www.rsm.tu-darmstadt.de)

or mail to Mr. Buerkle ([buerkle@trr150.de](mailto:buerkle@trr150.de))

# Save the Date!