

- INTRODUCTION TO MEASUREMENT TECHNIQUES  
OCTOBER 6-10, 2014
- INTRODUCTION TO GROUND TESTING FACILITIES  
NOVEMBER 17-19, 2014
- AEROENGINE NOISE  
DECEMBER 2-4, 2014
- PHYSICS OF SLOSHING LIQUIDS: EXPERIMENTS AND MODELLING  
JANUARY 13-15, 2015
- INTRODUCTION TO COMPUTATIONAL FLUID DYNAMICS  
JANUARY 26-30, 2015
- ADVANCED COMPUTATIONAL FLUID DYNAMICS  
FEBRUARY 9-13, 2015
- CFD FOR ATMOSPHERIC FLOWS AND WIND ENGINEERING  
FEBRUARY 23-25, 2015
- SPACE DEBRIS REENTRY AND MITIGATION (VKI-STO)  
APRIL 20-24, 2015
- TURBULENT COMBUSTION**  
MAY 4-8, 2015
- INDUSTRIAL COMPUTATIONAL FLUID DYNAMICS  
MAY 18-22, 2015
- POROUS MEDIA INTERACTION WITH HIGH TEMPERATURE AND HIGH SPEED FLOW (VKI-STO)  
SEPTEMBER 7-9, 2015

ONLINE REGISTRATION AVAILABLE  
<https://www.vki.ac.be>

It is highly recommended to register at the latest 15 days before the beginning of the course. A letter of acceptance and additional information will be sent on receipt of the application form.

### EARLY REGISTRATION FEE (until March 4, 2015)

VAT included	Type 1*	Type 2*	Type 3*
Normal	945 €	1235 €	1345 €
Phd	475 €	475 €	675 €
Undergraduate	210 €	210 €	280 €

### LATE REGISTRATION

VAT included	Type 1*	Type 2*	Type 3*
Normal	1350 €	1760 €	1920 €
Phd	675 €	675 €	960 €
Undergraduate	300 €	300 €	400 €

**\*Type 1:** Permanent residents of NATO countries funding VKI: Belgium, Czech Republic, France, Germany, Greece, Hungary, Iceland, Italy, Luxembourg, Norway, Portugal, Romania and Turkey

**\*Type 2:** Permanent residents of NATO countries not funding VKI or NATO partner countries

**\*Type 3:** Permanent residents of non-NATO countries  
The request to be considered for an award must accompany the application to attend the Lecture Series, and the applicant must provide a recommendation letter from his or her professor; if not done so, the request will not be taken into consideration. All possible alternative sources of funding should be investigated before aid is requested under this scheme, so that those most in need will benefit.



VON KARMAN INSTITUTE LECTURE SERIES  
TURBULENT COMBUSTION

MAY 4-8, 2015

## INTRODUCTION

The objective of this biannual Lecture Series on Turbulent Combustion is to present a state-of-the-art review of on-going activities in turbulent combustion and to outline current research directions. Introductory lectures on the fundamentals of combustion, and in particular of turbulent combustion, are followed by up-to-date reviews on numerical modeling and experimental results in single and two-phase flows. Gas turbine combustion, IC engines and gasification processes are treated extensively. The lecturers will also give an appraisal of the future challenges and perspectives in the domain. Participants to the lecture series are invited to present a poster of their activities related to turbulent combustion. A pdf-file of the poster should be submitted to [vanbeeck@vki.ac.be](mailto:vanbeeck@vki.ac.be) (Jeroen van Beeck) before 21 April 2015. The directors of the lecture series are Prof. L. Vervisch of INSA de Rouen and CNRS CORIA (France) and Dr. Veynante of CNRS and Ecole Centrale Paris (France). The local coordinator is Prof. Jeroen van Beeck of the von Karman Institute.

## SCHEDULE

### Monday 4 May 2015

08:45 Registration  
09:15 Welcome Address  
09:30 Introduction to turbulent combustion  
*Prof. L. Vervisch, INSA de Rouen and CNRS CORIA and Prof. D. Veynante, CNRS & Ecole Centrale des Arts et Manufactures, France*  
10:30 Coffee break  
11:00 Introduction to turbulent combustion (Cont'd)  
*Prof. L. Vervisch and Prof. D. Veynante*  
12:30 Lunch  
14:00 Introduction to turbulent combustion (Cont'd)  
*Prof. L. Vervisch and Prof. D. Veynante*  
15:15 Coffee break  
15:45 Introduction to turbulent combustion (Cont'd)  
*Prof. L. Vervisch and Prof. D. Veynante*  
17:15 Reception

### Tuesday 5 May 2015

09:00 Turbulent combustion modelling  
*Prof. L. Vervisch and Prof. D. Veynante*  
10:30 Coffee break  
11:00 Turbulent combustion modelling (Cont'd)  
*Prof. L. Vervisch and Prof. D. Veynante*  
12:30 Lunch  
14:00 Turbulent combustion modelling (Cont'd)  
*Prof. L. Vervisch and Prof. D. Veynante*  
15:15 Coffee break  
15:45 Turbulent combustion modelling (Cont'd)  
*Prof. L. Vervisch and Prof. D. Veynante*

### Wednesday 6 March 2015

09:00 Spray combustion  
*Dr. R. Koch, Universität Karlsruhe, Germany*

10:30 Coffee break  
11:00 Spray combustion (Cont'd)  
*Dr. R. Koch*  
12:30 Lunch  
14:00 Spray combustion (Cont'd)  
*Dr. R. Koch*  
15:15 Coffee break  
15:45 Modeling of coal combustion and gasification  
*Prof. Ch. Hasse, TU Freiberg, Germany*

### Thursday 7 May 2015

09:00 Experiments in turbulent combustion  
*Prof. A. Dreizler, TU Darmstadt, Germany*  
10:30 Coffee break  
11:00 Experiments in turbulent combustion (Cont'd)  
*Prof. A. Dreizler*  
12:30 Lunch  
14:00 Experiments in turbulent combustion (Cont'd)  
*Prof. A. Dreizler*  
15:15 Coffee break  
15:45 Combustion technologies for future gas turbines and requirements on design tools  
*Dr. S. Richard*

### Friday 8 May 2015

09:00 Applications of turbulent combustion modeling  
*Prof. D. Haworth, Pennsylvania State University, USA*  
10:30 Coffee break  
11:00 Applications of turbulent combustion modeling (Cont'd)  
*Prof. D. Haworth*  
12:30 Lunch  
14:00 Applications of turbulent combustion modeling (Cont'd)  
*Prof. D. Haworth*  
15:15 Coffee break  
15:45 End of the lecture series

## VON KARMAN INSTITUTE

VKI is a non-profit international educational and scientific organisation, hosting three departments (aeronautics and aerospace, environmental and applied fluid dynamics, and turbomachinery & propulsion).

It provides post-graduate education in fluid dynamics (research master in fluid dynamics, former "VKI Diploma Course", doctoral program, short training program and lecture series) and encourages "training in research through research". The von Karman Institute undertakes and promotes research in the field of fluid dynamics.



VKI possesses about fifty different wind tunnels, turbomachinery and other specialized test facilities, some of which are unique or the largest in the world. Extensive research on experimental, computational and theoretical aspects of gas and liquid flows is carried out at the VKI under the direction of the faculty and research engineers, sponsored mainly by governmental and international agencies as well as industries.

The von Karman Institute organizes each year about 10 one-week Lecture Series on specialized topics in the field of aerodynamics, fluid mechanics and heat transfer with application to aeronautics, space, turbomachinery, the environment and industrial fluid dynamics. These courses have gained over the years world wide recognition for their high quality, which is the result of a careful choice of subjects of current interest and lecturers known for their excellency and willing to co-operate in building up well-structured courses.



von Karman Institute for Fluid Dynamics  
Waterloosesteenweg 72  
1640 Sint-Genesius-Rode, Belgium

Phone: +32(0)2 359 96 04  
Fax: +32(0)2 359 96 00  
E-mail: [secretariat@vki.ac.be](mailto:secretariat@vki.ac.be)

Website: <https://www.vki.ac.be>

TVA BE 0407 185 709

follow us on  
**twitter**

[twitter.com/vki\\_vonkarman](https://twitter.com/vki_vonkarman)