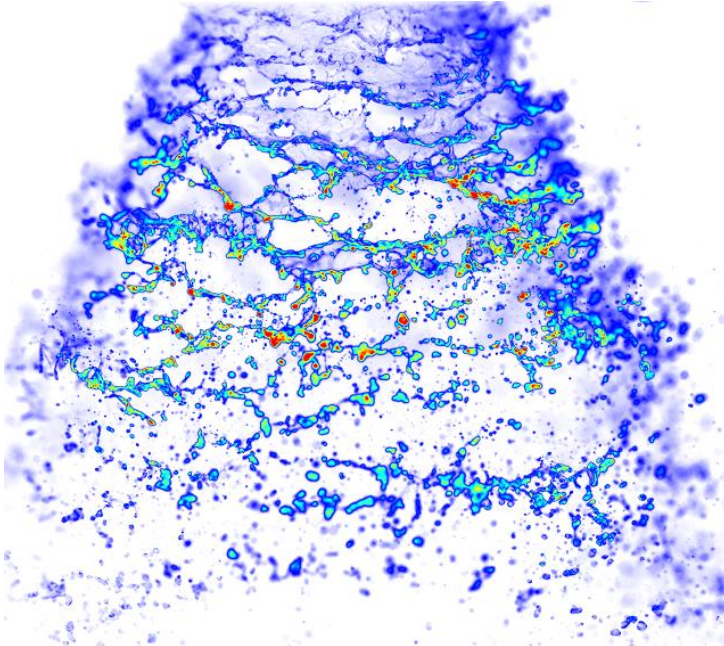




Graduate School and Incentive Program Activities

The Graduate School of CECOST,
Centre for Combustion Science and Technology,
announces the Graduate Course:

Laser Imaging of Spray Systems
October – November 2017, see pages 2-3.



Graduate Course - Fall 2017



Laser Imaging of Spray Systems

Objective

The objective of the course is to give an overview of laser imaging techniques for the characterization of spray systems. The course is intended for PhD-students and professionals within the field of *Atomization and Sprays* who want to get familiar with both the standard and most recent laser-based imaging techniques. The course will introduce the underlying principles of light propagation in sprays and will focus on the applicability and limitations of various techniques used for spray imaging. At the end of the course, the participants will be able to identify which approach is the most suitable for a specific problem and situation.

Content

The course will focus on:

- The fundamental parameters of imaging systems
- The effects of multiple light scattering and other artifacts affecting spray images
- The strategies to suppress those unwanted effects and how one can increase the image contrast
- The techniques for the visualization of liquid breakup and spray dynamics at high contrast and resolution
- The imaging techniques for the measurement of scalar quantities such as droplet size, concentration and spray temperature

Conventional optical approaches (e.g. white light shadowgraphy, laser sheet imaging) as well as more advanced imaging techniques (e.g. Ballistic imaging and Structured Laser Illumination Planar Imaging) will be treated. In addition, X-ray imaging will also be introduced during the course.

In addition to the lectures:

- Several experimental measurements will be demonstrated in the laboratory.
- An online software called "*Multi-Scat*" will also be taught to simulate the propagation of light through sprays.
- Group projects will be assigned and the participants will be required to give a presentation on some defined topics at the end of the final seminar.

Range

The course corresponds to 7.5 credits (ECTS). To fulfill the requirements of the course, the student must participate in all compulsory sections of the course and pass the examination at the end of the course.

Schedule

The course starts with a compulsory three-day seminar in Lund on October 25-27, 2017, containing introductory lectures and practical demonstrations followed by individual studies and homework assignments. The final part of the course will be a compulsory one or two day seminar (depending on the number of course participants) in Lund on November 16-17, 2017 (preliminary dates) with concluding lectures and presentations of student assignments. The first lecture will take place on Wednesday October 25 at 13.15 in room E421, the Building E, Department of Physics, Professorsgatan 1, Lund.

Literature and language

Specially developed course material will be distributed via LUVIT. The course and the literature will be given in English.

Prerequisites, Fees and Registration

See page 4.

Registration opens: May 22, 2017

Deadline for registration: September 25, 2017

Invited lecturers

Prof. Mark Linne, University of Edinburgh
Dr Elias Kristensson, Lund University

Course responsible

Assoc. Prof. Edouard Berrocal
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Lund University

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www.spray-imaging.com



General information

The courses are mainly given via internet, using the Luvit distance learning system. The typical 7.5 credit course (ECTS) starts and ends with a compulsory seminar. The course is extended over a period of two months with compulsory group exercises.

When all course requirements are fulfilled, the student is awarded a diploma. For PhD-students, the supervisors determine if the course is appropriate for inclusion in the PhD degree and the home department administrates the registration of the course in the study plan.

Prerequisites

The courses are primarily intended for graduate students and professionals with a background corresponding to a Master of Science in Engineering Physics, Mechanical Engineering, Chemical Engineering or equivalent

Fees

The CECOST courses are free of charge for PhD-students registered at Swedish or foreign universities. For regular 7.5 credit courses the course fee is 14.000 SEK (VAT not incl.) for company employees not belonging to the previous category.

Lunch, coffee and social activities at the seminars are provided free of charge. Travel and accommodation for participation in the seminars is to be arranged by all course participants themselves.

Registration:

Please register on-line at: <http://www.cecost.lth.se/>.

Early registration is encouraged!

Information

Updated information concerning upcoming courses can be found at the CECOST webpage, <http://www.cecost.lth.se/>.

For further information please contact:

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