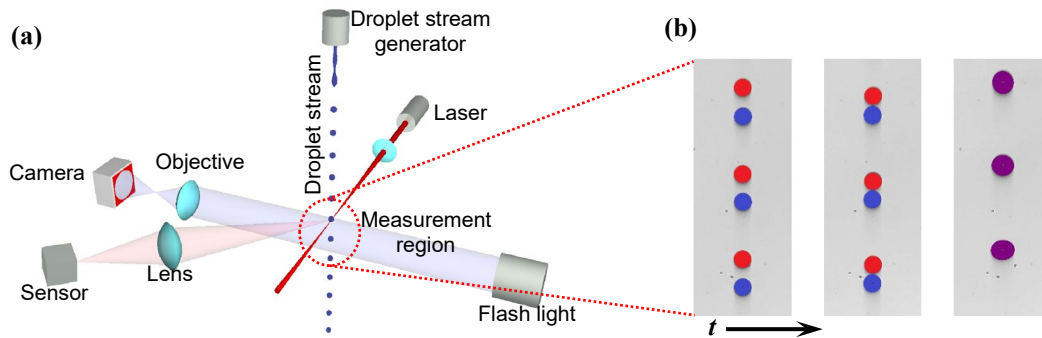


## Studentische Hilfskraft (HiWi)

### Modification of Experimental Facility for Droplet Grouping Investigations



**Figure 1.** (a) Schematic of experimental system, and (b) typical (modified) images of the evolution of a group of two droplets (adapted from Roth et al., 2017<sup>1</sup>).

#### A. Overview of the project:

Droplet grouping is defined as the phenomenon by which droplet separated farther from each other at a previous instant of time tend to come closer with time. This is commonly seen in sprays, and has a significant effect in determining the evaporation behaviour of droplet clusters in combustion processes. The ongoing study investigates grouping in binary droplet systems (see Fig. 1(b)). An experimental facility already exists at ITLR to investigate such droplet grouping phenomena (see Fig. 1(a)). The current task is to modify the existing experimental facility for easier and systematic experimentation.

#### B. Responsibilities:

Support and assist in the construction/modification of an experimental facility with the following components: isolation chamber, three-axis translation system, image acquisition system, pressure tank.

#### C. Pre-requisites:

Enthusiasm/interest in experimental construction and investigations

#### D. Learning benefits:

Opportunity to learn about experimental systems commonly used in droplet dynamics experiments; exposure to the fascinating world of droplets!

#### E. Start date, working hours, and duration of work:

Tentative start date: January 2020 (can be discussed)

Working hours: 20-60 h per month

Duration: Initial contract for 3 months (can be extended)

#### F. Contact:

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<sup>1</sup> N. Roth, H. Gomma, A. Livne, D. Katoshevski, and B. Weigand, "Theoretical and Experimental Study of Grouping Effects on Droplet Streams", ILASS-Europe, 6-8 Sept. 2017, Valencia, Spain, DOI: 10.4995/ILASS2017.2017.4685.