Bachelor/Master project: Flame bullet time movie production

Aim

To produce a bullet time movie of a highly turbulent swirl flame, Fig 1.

Description

The bullet time effect is often used in the film and video games industry to elaborate on high-speed movements such as a moving bullet or the famous scene in The Matrix Trilogy movie (bullets flying over the actor as he bends backwards). Several cameras are arranged around a fast-motion target, such as a flame. Images are obtained with a sequential time delay between them and put together to generate a movie of the flame's motion with an effectively super high frame rate. A total of 32 CCD cameras are available, an example of 24 of them arranged around a swirl burner is shown in Fig. 2.

Requirements

The candidate must have an interest in laboratory work, and good programming skills are essential. Experience in technical lab work, image processing, scientific imaging or movie production will also be beneficial.

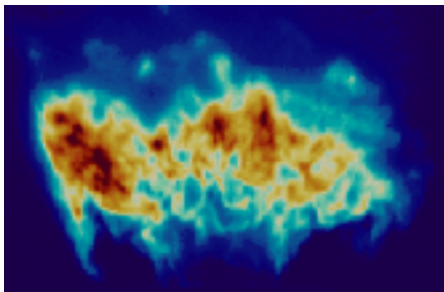**For further information please contact khadijeh.mohri@uni-due.de.**
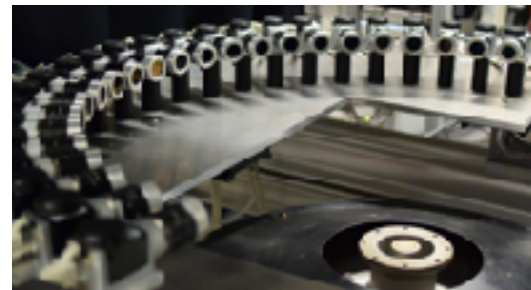

FIg. 1: Image of the swirl flame

Fig. 2: 24 cameras, with filters, arranged around the swirl burner.