

Einladung

Das Institut für Strömungstechnik und Thermodynamik (ISUT) veranstaltet im Rahmen der DFG-Forschergruppe 1447 "Physicochemical-based models for the prediction of safety-relevant ignition processes" am

Montag, dem 28. Juli 2014, ab 14:00 Uhr s.t.

im Gebäude 10, Raum 110 ein außerplanmäßiges

Institutskolloquium,

mit dem Vortrag

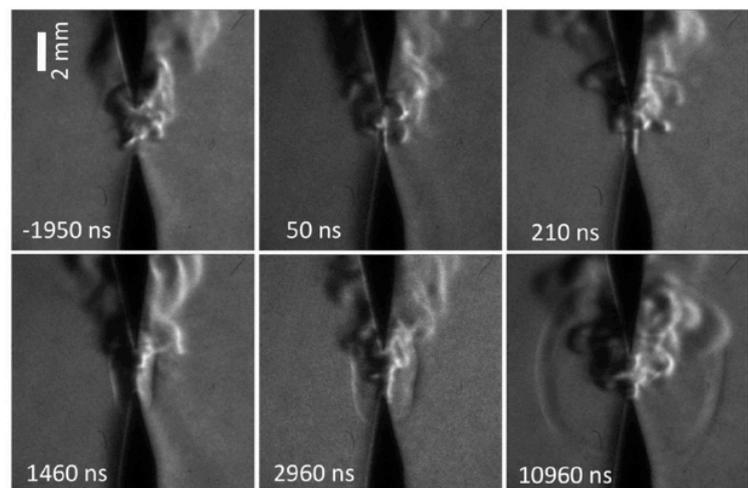
**"Nanosecond Repetitively Pulsed Discharges
in Plasma-Assisted Combustion"**

Referent: **Prof. Christophe Laux** (*Laboratoire EM2C, CNRS,
Ecole Centrale Paris, Chatenay-Malabry, France*)

Abstract: Studies of plasma-assisted combustion by nanosecond repetitively pulsed discharges have been conducted in methane, propane and kerosene-air flames at the EM2C laboratory. The objective is to understand the mechanisms of stabilization of fuel lean flames to ultimately reduce the emissions of pollutants such as CO or NO, while still maintaining complete combustion. Experiments on laboratory combustors of power up to 200 kW show that the discharges can successfully reduce the lean extinction limit by up to 70% with a power consumption less than 1% of the power released by the flame. The chemical and thermal effects of the discharges were investigated and evidenced an ultrafast heating mechanism and up to 50% dissociation of oxygen molecules. The mechanism of production of active species will be discussed.

Über Ihre Teilnahme würden wir uns sehr freuen!

Prof. Dominique Thévenin



Case 2 (Gap distance = 2 mm, PRF = 10 kHz, $T_{air\ flow} = 300\ K$)