

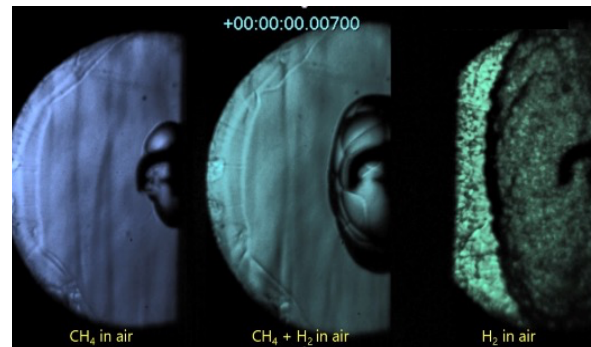
Conference on Combustion Research in Switzerland 2024

Programme

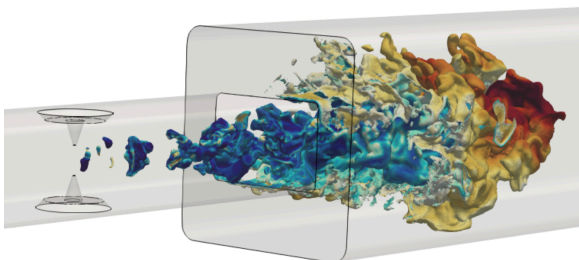
Date: Friday, 2nd February 2024
Location: ETH Zürich, Zentrum HG F30
Time: 08:30 a.m. to 5:00 p.m.



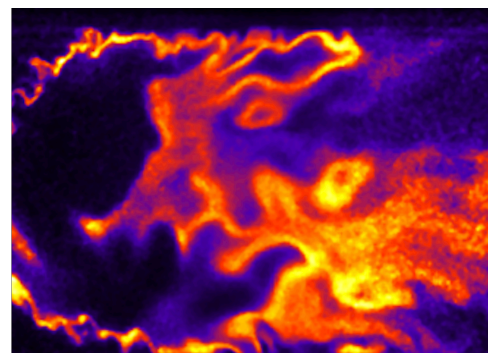
Combustion Research Laboratory with optical test facilities at FHNW-ITFE.
Herrmann, ITFE FHNW



Different flame kernel development at the same time after ignition (7 ms) for the three different mixtures investigated.
Moretto, APT Empa



Large Eddy Simulation of a CH₄-H₂ sequential flame controlled by repetitively pulsed nanosecond discharges.
Malé, Shcherbanev, Impagnatiello, Noiray, CAPS
ETHZ



OH Planar Laser Induced Fluorescence of a swirled non-premixed hydrogen flame.
Wang, Faure-Beaulieu, Schuermans, Noiray, CAPS
ETHZ

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For a long time, renewable fuels were an interesting alternative to conventional fossil fuels for research purposes. However, their implementation on the market was reserved for niche applications. With the internationally recognized goal of decarbonizing the energy system, the situation has changed fundamentally. Only non-fossil fuels are now viable for the future, and for applications that are difficult to electrify. These include applications in water, on land or in the air with high loads, long operating times, high load variability, independence from energy infrastructure and the need for fuel flexibility. Other important areas of application are power generation and combined heat and power generation.

It is interesting to note that the Swiss combustion industry has long been primarily active in these areas of application and that there is a highly qualified and internationally recognized research expertise in universities and industry. The challenge is to achieve the high efficiency and robustness of the combustion systems achieved to date with low emissions using renewable fuels, which have very different thermo-chemical properties.

At this year's Combustion Conference, you can find out what ideas, means and methods Swiss combustion researchers are using to tackle these challenges and what they have achieved. The industry will also be represented and will report on its development and implementation plans. The event is also intended to serve your networking activities and give young scientists the opportunity to establish contact with industry.

As in previous years, the event will be held at the ETH in Zurich and is designed as an on-site event only. Participation is free of charge.

Online registration is now open – please click [here](#).

Contact:

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Organizing committee:

Prof. Dr. Nicolas Noiray, Head of the laboratory of Combustion and Acoustics for Power and Propulsion Systems CAPS; ETH Zurich
Prof. Dr. K. Herrmann, Head of Combustion Research ITFE, FHNW Switzerland
Prof Dr Mirko Bothien, Head of the Department of Renewable Energies, ZHAW Zurich
Dipl.-Ing. Stephan Renz, Head of the research programme on Combustion Based Energy Systems; Swiss Federal Office of Energy

Programme

08:30	Registration starts - Networking with Welcome Coffee
09:00	Welcome address and opening remarks
09:15	H2 powered aircrafts Nicolas Noiray, CAPS ETHZ, Zurich
09:40	IC engine ammonia combustion processes Kai Herrmann, ITFE FHNW, Brugg-Windisch
10:05	Efficient part-load operation of heavy duty DME engines Patrik Soltic, APT Empa, Dübendorf
10:30	Coffee break ■ Poster ■ Networking
11:00	nekCRF: Harnessing exascale HPC systems for combustion research Christos Frouzakis, CAPS ETHZ, Zurich
11:20	Hydrogen direct injection combustion process Laura Merotto, APT Empa, Dübendorf
11:40	Lubricating oil induced pre-ignition in premixed combustion processes Patrick Albrecht, ITFE FHNW Brugg-Windisch
12:10	Exhaust gas cleaning in ammonia engines Oliver Kröcher, LEP, Paul Scherrer Institute, Villingen
12:30	Lunch
14:00	Pressure scaling for methane-hydrogen flames Viken Mouratian, IEFE ZHAW
14:25	Acoustic response of premixed H₂/Air jet flames arrays Kihun Moon, CAPS ETHZ, Zurich
14:40	Plasma control of autoignition in sequential combustor: Large Eddy simulations Quentin Malé, CAPS ETHZ, Zurich
14:55	Plasma control of autoignition in sequential combustor: High pressure demonstration Bayu Dharmaputra, CAPS ETHZ, Zurich
15:10	Coffee break ■ Poster ■ Networking
15:30	Combustion dynamics prediction for high-hydrogen gas turbines Layal Hakim, GE Vernova, Baden
15:55	Towards the Zero Emission Gas Power Plant Andrea Ciani, Ansaldo Energia, Baden
16:20	Delivering solutions for decarbonisation international shipping: WinGD's approach towards development against unprecedented tight schedules German Weisser, WinGD, Winterthur
16:45	Closing remarks
17:00	End of the Conference

ETH Zurich, Zentrum

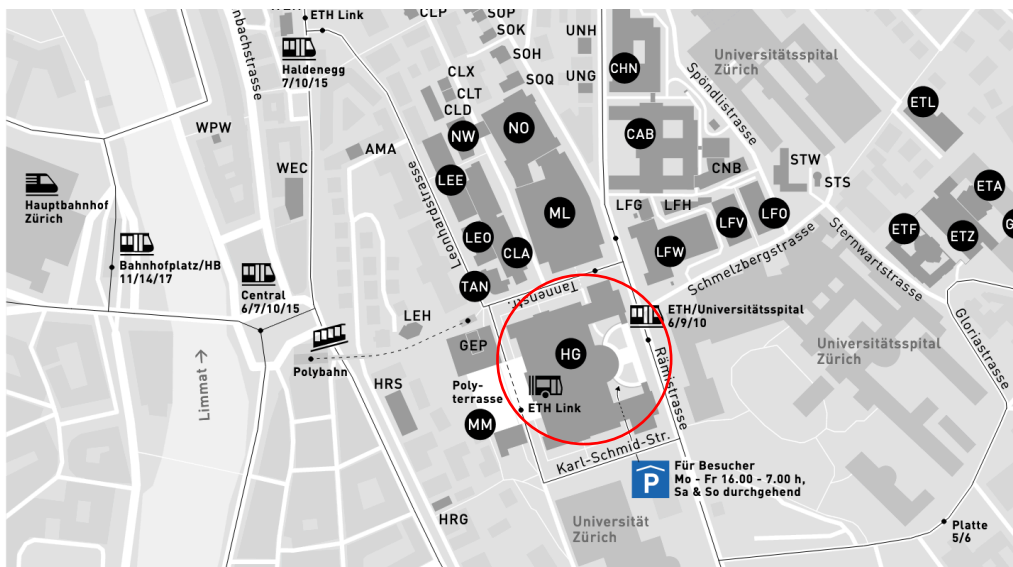
Travelling from Zurich Central Station

From the “Bahnhofstrasse/HB” stop

Tram no. 6 (towards the Zoo) as far as the “ETH/Universitätsspital” stop. Journey time: approx. 6 minutes

From the “Bahnhofplatz/HB” stop

Tram no. 10 (towards the Airport or Oerlikon station) as far as the “ETH/Universitätsspital” stop. Journey time: approx. 8 minutes



Travelling from Zurich Airport

By tram

From the “Zurich Airport” tram stop

Tram no. 10 (towards Bahnhofplatz/HB) as far as the “ETH/Universitätsspital” stop.

The tram runs every 7 to 15 minutes between 6 o'clock in the morning and 11 o'clock at night.

Journey time: 30 min

By rail

If you wish to travel from the airport to the city centre (Central Station), you are recommended to use the S-Bahn or mainline services. The trains depart from the “Zurich Airport” station. Journey time: approx. 10 minutes

You will require a ticket valid for 3 zones.

If you are spending the whole day in Zurich, it is worth buying a day pass (valid for 24 hours). A 24h ticket costs only twice as much as a regular one-way ticket.