

# TCP Clean and Efficient Combustion

**A few highlights and updates from the TCP for the EUWP**

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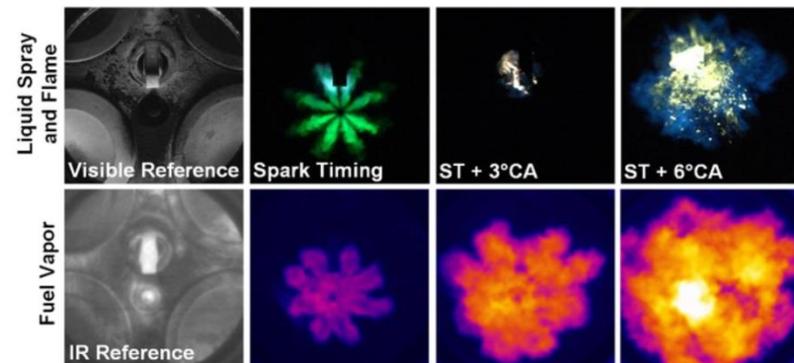
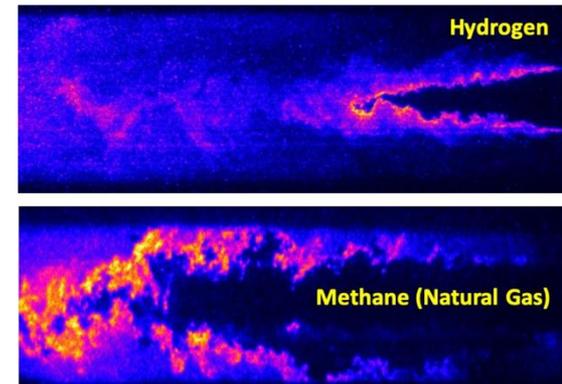
**U. Duisburg-Essen, Germany**

# Highlights in science and dissemination

- Building upon a U.S. DOE EIA analysis to understand effects of light-duty vehicle technologies on the fleet, the need for both electrification and increased ICE efficiency to meet 2050 light-duty CO<sub>2</sub> reduction targets was demonstrated.
- Two pre-competitive projects jointly funded by the German Research Association for Combustion Engines and the Swiss Federal Office of Energy successfully completed.
  - DI of natural gas in high-efficiency compression ignition engines.
  - Improved engine modelling for developing higher-efficiency engines.
- **Dissemination:**
  - Visibility in the scientific community continues to be high with extensive contributions to journals and conferences.
  - TCP website fully updated. TLM presentations posted. Public access granted to information on meetings, presentations, discussion topics.

# Contributions to IEA activities and analyses

- Provided input to IEA efforts and reviewed IEA documents (e.g., ETP2020, GEVO2020, TCEP, the GFEI report, and discussions on compatibility of biofuels and marine engines.)
- Two submissions to IEA initiative “Today in the lab, tomorrow in energy”
  - “Running combustion engines on non-carbon fuels” selected by CERT for initial round of promotion Research and funding from France, Japan, Norway, Sweden, Switzerland, United Kingdom
  - “Optimising fuels and engines to boost efficiency and performance” Joint project by several US nat’l labs, funded by DOE



# New Tasks & collaboration with other TCPs

- **Several new Tasks under consideration**
  - Systems analysis (see below)
  - Hydrogen and its vector fuels
  - Exhaust aftertreatment
  - High-efficiency lean-burn engines
- **Systems analysis links established with AMF and ETSAP**
  - Next meeting: March 17, 2021, Yuri Kroyan <yuri.kroyan@aalto.fi>
- **TCP participated in the December 2020 ETSAP workshop**
  - Presented scope and activities of the TCP, the upcoming Systems Analysis Task, and performance of advanced fuels in end-use sectors.
  - Potential areas of collaboration with ETSAP were discussed
- **Presentations by & discussion with the TCPs AMF and Bioenergy at online Task Leaders Meeting August 2020**