

# Summary of The First Meeting of The Hydrogen-Fueled ICE Collaborative Task:

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IEA Task Leaders Meeting  
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# Program Overview

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## Objective

Increase the fundamental understanding of the controlling physical and chemical processes governing internal combustion engines operating on hydrogen.

## Strategies

- H<sub>2</sub> enrichment of hydrocarbon fuels (**H<sub>2</sub>E-ICE**).
- H<sub>2</sub> as a pure fuel (**H<sub>2</sub>ICE**).

## Benefits:

- H<sub>2</sub>E-ICE and H<sub>2</sub>ICE research communities are small and much can be gained by collaborative efforts.
  - establishment of baseline operating conditions.
  - instrumentation and diagnostics.
  - validation of models and so forth.

# Goals for the H<sub>2</sub>ICE Task

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- **NOT JUST ANOTHER MEETING**
  - aim is to establish a working group
- **Identify areas of collaboration and seek out potential collaborators**
- **Network between participants**
  - distribution of manuscripts
  - conference announcements
  - among others
- **Engage non-participants (parties not in attendance)**
  - handouts
  - virtual attendance
  - among other methods

# Technical Program

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- Jansohn, Peter “Emission & combustion characteristics of H<sub>2</sub>-containing reformer gas in Internal Combustion Engines”
- Verhelst, Sebastian “H<sub>2</sub> ICE research at Ghent University”
- Tomita, Eiji “Hydrogen Combustion and Exhaust Emissions Ignited with Diesel Oil in a Dual Fuel Engine”
- Fujimoto, Hajime Gen “Auto-Ignition and Burning of an Unsteady Hydrogen Jet”
- White, Christopher “Overview of Sandia's Hydrogen Engine Research Program”

# Potential Areas of Collaboration

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- **Flame speed measurements for engine-like pressures and temperature**
- **Heat transfer characteristics and suitable correlations**
- **Fundamentals of transient hydrogen jets**
- **Fundamentals of knock/preignition in hydrogen engines**