

Hydrogen-Fueled ICE Collaborative Task: Opening Remarks

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H₂ICEs: A bridge to the hydrogen economy

- **Technology is available today and economically viable in the near-term.**
- **Number of test/demo vehicles: Ford, BMW among others (see below).**
 - demonstrated efficiencies in excess of today's gasoline engines.
 - operate cleanly (NO_x is the only emission pollutant)
- **Fewer constraints concerning H₂ storage compared to fuel cells.**
 - impurities are a non-issue
 - relative ease of a dual-fuel option (H₂/gasoline).



Program Overview

Objective

Support the development of high-efficiency H₂ICE by increasing the fundamental understanding of the controlling physical and chemical processes governing ICE operation on hydrogen.

Strategies

- H₂ enrichment of hydrocarbon fuels (**H₂E-ICE**).
- H₂ as a pure fuel (**H₂ICE**).

Benefits:

- H₂E-ICE and H₂ICE research communities are small and much can be gained by collaborative efforts.
 - development of fundamentals
 - establishment of baseline operating conditions.
 - instrumentation and diagnostics.
 - validation of models.
- The product of the H₂ICE Collaborative Task will be the sharing of information.

Goals for the H₂ICE Task

- ✓ **Establish a working group**
 - identify areas of collaboration
 - seek out potential collaborators
- **Build consistent participation**
- **Network between participants**
 - distribution of manuscripts
 - conference announcements
 - among others
- **Engage parties not in attendance**
 - handouts
 - virtual attendance
 - among other methods

Technical program – more than 30 invited

- Sebastian Verhelst, “Laminar burning velocity correlation for H2ICE modeling”
- Dennis Siebers and Sebastian Kaiser, “Sandia H2ICE Combustion Research”
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Interested researchers: >30 invited this year

NAME	ORGANIZATION
Konstantinos Boulouchos / Enrico Conte	Swiss Federal Institute of Technology, Switzerland
G.H. Choi	Keimyung University, Republic of Korea
Steve Ciatti / Thomas Wallner	Argonne National Laboratory, USA
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Jaal Ghandhi	University of Wisconsin, USA
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Hiroshi Kawanabe	Kyoto University, Japan
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Michael Pfitzner	Armed Forces Univ of Munich, Germany
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