NEWSLETTER JUNE 2024

Introduction:

On behalf of the entire HELIOS consortium, we are pleased to welcome you to our first project newsletter. HELIOS, funded by the EU and supported by the Commission's Clean Hydrogen Partnership, is committed to reducing CO2 emissions in power generation by advancing hydrogen combustion technology in gas turbines.

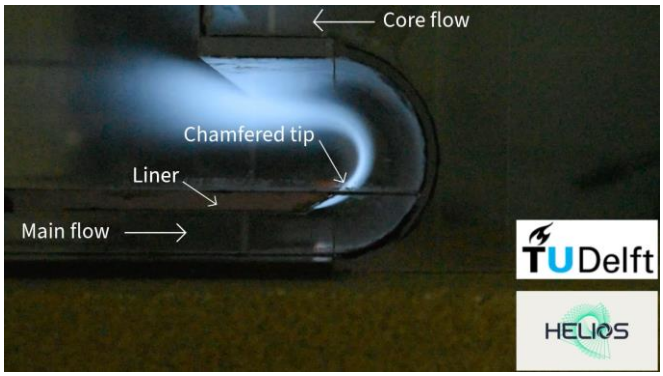
Our project brings together leading institutions from across Europe to enable low NOx combustion of hydrogen-enriched fuel, utilizing the innovative FlameSheet™ technology. This technology will retrofit existing gas turbines, allowing for high-hydrogen, low-NOx combustion, and resulting in electricity generation with no carbon emissions—only water.

We invite you to join us on this exciting journey. Please remain informed about our progress and upcoming events of the HELIOS project. For more information, visit our **website** or connect with us on **LinkedIn.**

Upcoming events and announcements:

- June 24-28, 2024: Attendance of project partner CCA at Turbo Expo 2024
- Nov 21-22, 2024: MidTermReview (MTR) meeting with HELIOS consortium in Brussels, Belgium
- Nov 18-22, 2024: European Hydrogen Week 2024, Brussels, Belgium

News flash:



Small scale hydrogen flashback study - June 2024

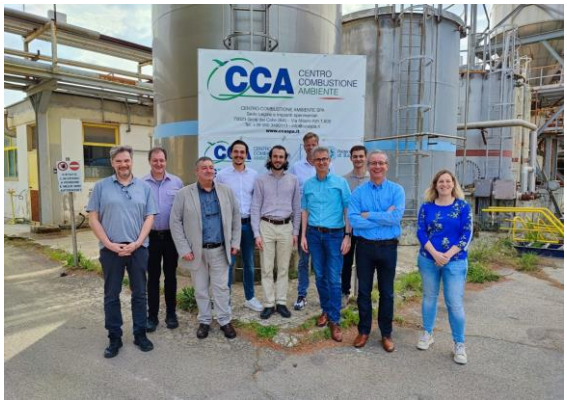
We are pleased to announce our latest findings on flame flashback in hydrogen combustion, a critical area for advancing sustainable energy. This small-scale experimental study, conducted by Rafael Pichler at the Technical University of Delft, utilizes cutting-edge experimental data to understand and prevent flashbacks in hydrogen combustion systems. The video illustrates the flashback phenomena of a methane-hydrogen flame in a small-scale experiment

Read more

HELIOS General Assembly 02 meeting- April 2024

April 10th 2024, we held our third live meeting, kindly hosted by Antonio Ferrante and Alessandro Saponaro of Centro Combustione Ambiente Spa (CCA), located in Gioia del Colle, Italy. Our project partners came together to share updates on the developments of hydrogen-based gas turbines and discussed their progress. It was a productive event where we established a solid foundation for the upcoming tasks in the HELIOS project.

Read more



This project is supported by the Clean Hydrogen Partnership and its members.

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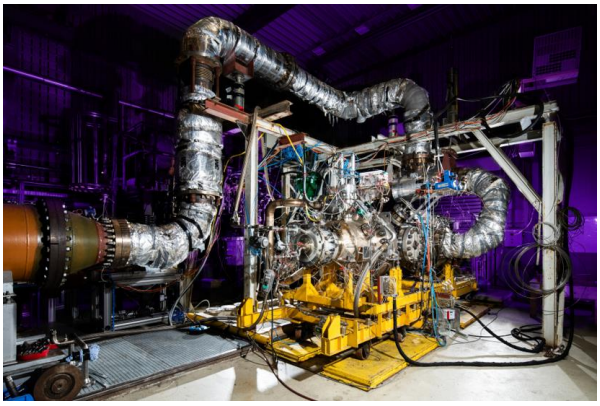

High pressure campaign – Feb 2024

Thomassen Energy achieved a milestone with the first successful HELIOS high-pressure Campaign! Their Flamesheet™ combustor prototypes, tested at DLR Cologne, showcased remarkable results. Forced flashback events were visualized for the first time, thanks to endoscopic measurement and high-speed UV camera technology. This breakthrough marks a significant stride towards eco-friendly combustion systems, offering insights crucial for enhancing safety in modern hydrogen combustion.
Read more

European PhD hydrogen conference - March 2024

We are delighted to share our experience from the inaugural European PhD Hydrogen Conference (EPHyC - European PhD Hydrogen Conference). This pioneering event brought together EU-based PhD researchers who are exclusively focused on hydrogen-related research topics. At the conference, the HELIOS project proudly showcased its groundbreaking work by TU Eindhoven PhD student, Stijn Schepers. Stijn presented some preliminary results from his hydrogen flame simulations, offering a glimpse into the future of advanced combustion technologies. Read more

Leaflet for outreach activities presented

The HELIOS project addresses the pressing need to reduce CO_2 emissions in the power generation sector by advancing hydrogen combustion technology in gas turbines. Gas turbines are recognized for their robustness, flexibility, and cost-effectiveness, making them a key player in distributed and large-scale power generation. However, the transition to decarbonize the fuel of these gas turbines, particularly by incorporating hydrogen, presents significant technological challenges.

Illustration showing the aim of the HELIOS project: to substitute the current use of natural gas (mainly methane) with 100% hydrogen, resulting in no carbon emissions during electricity generation (only water is emitted).

More information

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