

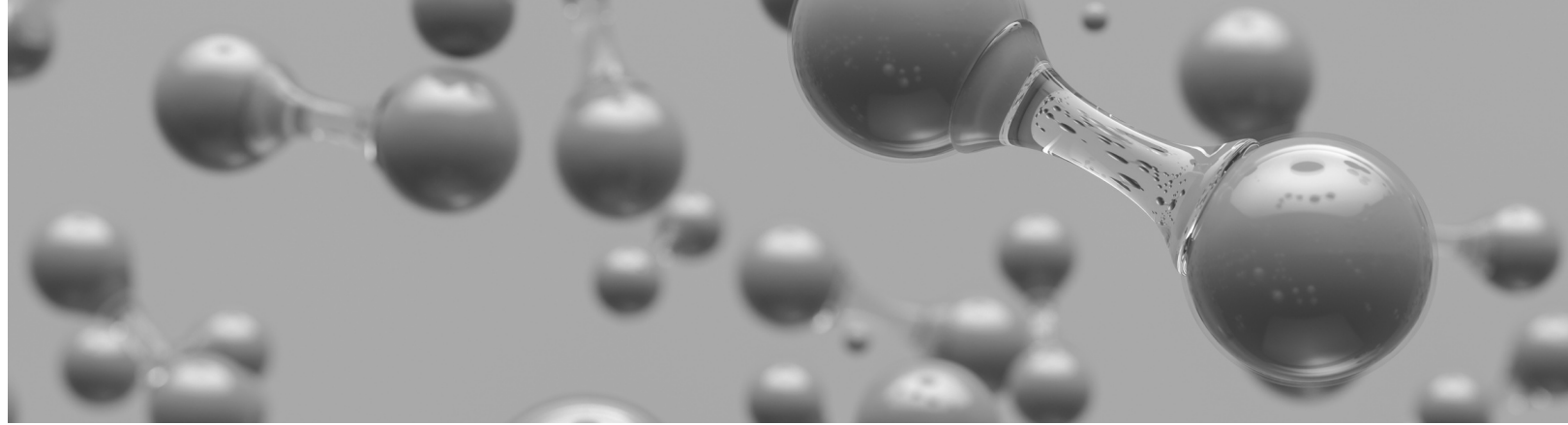
Altronic, LLC, and Prometheus Applied Technologies Join Forces to Optimize ICE Spark Plug and Ignition Technology for Hydrogen

JOINT SALES AND MARKETING AGREEMENT

Prometheus Applied Technologies and Altronic, LLC, (a member of the HOERBIGER Group) are pleased to announce that they have entered into a Joint Sales and Marketing Agreement to leverage their respective expertise for the mutual benefit of the global internal combustion engine market. The initial goal is to develop and market advanced adaptive ignition with prechamber technology using CFD modeling and a systems' approach that will advance the current state-of-the-art in the application of Hydrogen fuel to spark ignited internal combustion engines.

The current hydrogen engines are typically derated derivatives of their natural gas-fueled counterparts in order to mitigate the high propensity to abnormal combustion experienced with the use of hydrogen. This represents a serious obstacle to the widespread use of high efficiency and high power density hydrogen internal combustion engines (H₂-ICEs).





COMBINED EFFORTS USE STRENGTHS

This cooperative effort will use Prometheus' expertise in advanced CFD modeling and prechamber combustion analysis to create prechamber ignition algorithms tailored to the specific operating parameters of hydrogen-fueled engines, both steady-state and transient. The ignition system, designed and manufactured by Altronic, LLC, incorporates these algorithms in its CPU where analysis of the secondary voltage signal provides the information on spark location and flow velocity needed to predict the start of combustion (SOC) and the adjustment to the spark power that keeps the SOC of that particular cycle near the target value serve to stabilize the engine combustion by minimizing the cycle-to-cycle variations and maximizing the spark plug life. This product and technology will enable engine designers to increase the power density and thermal efficiency of their H₂-ICEs to levels approaching advanced diesel engines but with zero emissions.

PARADIGM LEAP

The result will be a paradigm leap in currently available technology, allowing engine manufacturers and users to realize the full potential of this renewable source of energy in spark-ignited applications. Altronic, LLC, and Prometheus will commercialize the products and services related to this cooperation to the benefit of the global market.

PARTNERS

Altronic, LLC, founded in 1955, is a global leader in the design and manufacture of electronic spark ignition systems, accessories, engine controls, and instruments. They have extensive expertise in the design of advanced industrial electronics.

Prometheus Applied Technologies, founded in 2010, is a research and development engineering company with extensive expertise in high-fidelity engine combustion modeling and simulation. They also have expertise in the design and manufacturing of prechamber spark plugs and combustion system solutions.

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