

Alternative Fuels

Into the Future with IAV

Alternative fuels ease the strain on the environment and reduce the dependency on crude oil. Ethanol, biodiesel, biomass-to-liquids (BTL), CNG, LPG and hydrogen all provide alternatives to the conventional fuels of gasoline and diesel. Each of these fuels has its benefits and drawbacks and cannot be used in existing engines without further ado. The vapor pressure anomaly of ethanol mixture, the chemical properties of biodiesel and the additional safety regulations for H₂ must be taken into consideration in engine development.

If a vehicle drive is bivalent or if the engine is to be suitable for a fuel mixture across a broad spectrum, additional demands are made on the engine hardware and software.

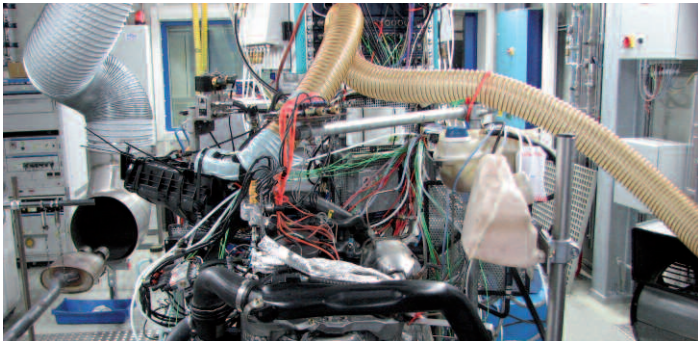
Whether tribology, combustion process or algorithm development, IAV not only possesses the theoretical expertise in alternative fuels, it can also draw on practical experience. Right from the outset, IAV has been developing bivalent and monovalent CNG drives for mass production and converting vehicles for CNG operation using our internally designed injection system. Our engine test benches are CNG, LPG, biodiesel and ethanol tested and the engines of tomorrow are already running on our hydrogen test bed today.

As an internationally focused engineering company, IAV offers the automotive industry a multitude of development services for future vehicle generations. IAV's over 4,000 members of staff are driven by inventive spirit and the determination to get things moving in engineering. Our particular strength lies in interdisciplinary work and overall vehicle expertise – because only an eye for the whole picture guarantees solutions that are qualified to enter mass production.

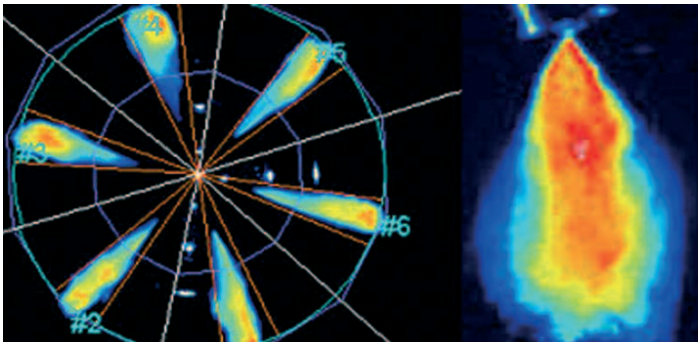




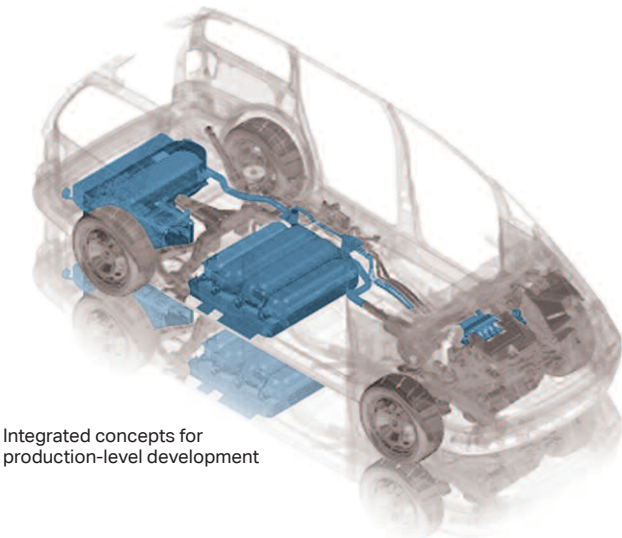
Powertrain Mechatronics



Gaseous-fuel engine on test bench



Spray analysis



Integrated concepts for production-level development

We are in a position to conduct all analyses and investigations of relevance to mass production in the context of alternative fuels.

Engine test benches (38 in Europe, 4 in the US)

- 9 for LPG
- 10 for CNG
- Various test benches for 100 % ethanol
- Various test benches for 100 % biodiesel

Our test facility for injection components is at your disposal specifically for injection systems.

Test benches for injection systems

- Suitable for ethanol and biodiesel
- Rapidly convertible to gaseous fuels

Even the most environmentally friendly fuel can only display its benefits if its potential can be achieved in the engine while at the same time meeting the client's demands on a modern vehicle drive. At IAV, a solution's suitability for mass production always comes first!