

MISSION STATEMENT

FVV

Prime movers – internal combustion engines, hybrids, turbomachines and fuel cells – as well as purely electric motors, are the powertrain and energy conversion systems in current and future applications. In conjunction with renewable fuels, they play a pioneering role in climate-neutral and resource-conserving mobility, transportation and energy supply, as well as in industrial value creation. At the same time, the innovative strength of the industry and its economic success have a significant impact on the well-being of society.

In the competition for the best solutions, research that is open to different technologies is a fundamental requirement for innovation and competitiveness. Only when this requirement is met, will it be feasible to position all of the best possible technologies for new mobility concepts, electrified powertrains and energy generation on the market in a way that optimises their benefits.

As a non-profit association, the Research Association for Combustion Engines – FVV – supports the development of the industry through pre-competitive research.

FVV stands for more than just technical innovations

Sustainability: Both society and policymakers place stringent demands on the combustion engine in all its applications. Through our research, we help ensure that internal combustion engines, hybrids, turbomachines and fuel cells meet the set goals regarding resource conservation, greenhouse gas neutrality and zero impact emissions. When combined with different technologies in particular, they will retain and increase their importance in existing and new utilisation concepts. By conducting research for all fields of application, we are able to develop and evaluate the full range of innovative technologies. We are always open for the best solution from a technical, economic and environmental point of view. The future utilisation of the combustion engine is essentially independent of fossil energies in this respect.

Competitiveness: We support the industry in its drive towards economic and environmental success by providing practical findings from application-oriented fundamental research. With our pre-competitive research, we optimise internal combustion engines, hybrids, turbomachines and fuel cells in the context of their use. We work together to develop the knowledge needed for this in industrial collective research ("Industrielle Gemeinschaftsforschung", or IGF) projects, focusing in particular on the interests of small and medium-sized enterprises in the complex industrial value creation chain. We utilise the opportunities afforded to us by the digital transformation in technology and society to continuously expand our research.

Teamwork: Cooperation, trust and openness are the key to FVV's success. We use the ideas of our member companies, other organisations and associations and from the field of research, placing our trust in the constructive cooperation of all network partners and the excellence of the associated research and technology organisations. Creative ideas and dedicated people ensure the long-term success and benefit of our research network, which is why we actively pursue collaboration with partners who share our ideas and goals.

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The three pillars of FVV

The success of FVV is based on the three pillars of technology, network and young talent:

We develop future **technologies** for the advancement of internal combustion engines, hybrids, turbo-machines and fuel cells in pre-competitive collective research projects which are open to all member companies on an equal basis and, during the transfer phase, to all interested market participants. The **network** of members from small, medium-sized and large companies collaborates with the world of science and other cooperation partners to further stimulate the already high technological level of the industry. By conducting projects at universities and other research facilities, FVV plays an important role in contributing to the practical education and training of **young talent** in research and theory.

Collaboration in FVV

FVV is keen for companies to get involved, compiles the pre-competitive collaborative research activities of its members, evaluates them strategically and implements them in a professional way. As a communication, knowledge and transfer platform, our association relies on the active participation of companies. We ourselves play the role of a platform manager and communicator, selecting relevant topics, transferring the knowledge gained, entering into discussions with participating members and network partners through our events and media offerings and spurring on the research community at FVV to contribute with innovative and future-oriented ideas.

In a globalised business world, international cooperation is the key to technical progress. Our objective is to establish FVV as the world's leading platform for pre-competitive industrial collective research in combustion engines and fuel cells and to continue advancing it still further. To this end, we are taking advantage of our established network and expanding it consistently and systematically through cooperation and partnerships on both a national and international level. We integrate international companies as well as research and technology organisations sustainably and on an equal footing, and gear our cooperative culture towards this.

We enter into partnerships with relevant institutions in order to assume social responsibility for the implementation of our sustainability targets. Through measures including high-quality publications, we continuously provide information on the results of our work. Our scientifically sound studies help provide orientation in complex technical matters for decision-makers from the arenas of politics, business, science and society. We are open for social discourse and political debate and contribute with neutral scientific facts.



The topics of FVV

Through our scientific work, we contribute to CO₂-neutral, zero impact emission mobility and energy conversion in the context of an interlinked transition in transport and energy policies. The optimisation of the combustion engine – whether internal combustion engines, hybrids or turbomachines – and the fuel cell in its broad range of applications continues to open up significant potential, which we aim to leverage.

Our strength and expertise in the area of method development and in the provision and continuous improvement of application-oriented development tools form the basis for our interdisciplinary success.

Particular focal points of our research agenda are the system integration and optimisation of the combustion engine, its combination with other powertrain and drive technologies and new energy conversion concepts:

- Optimisation of the combustion engine
 - Conventional and hybridised powertrains
 - Turbomachinery
 - Materials research for the transition in transport and energy policies
- Fuel cell technologies
- Alternative fuels
 - Biofuels
 - Hydrogen
 - Synthetic fuels
- Effects of renewable energy sources on mobility, transportation and energy generation and their demands on the powertrain and energy conversion systems of the future
- Digitalisation and artificial intelligence

We actively adapt our working structures and processes to our members' requirements and address the latest technological developments and technical challenges.

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