



News Release

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Contacts:

Robert Jozsa

Product Manager Alternative Technology

Parker Hannifin Engine Mobile Filtration EMEA Division

Email: robert.jozsa@parker.com

Lisa de Beer

Public Relations EMEA

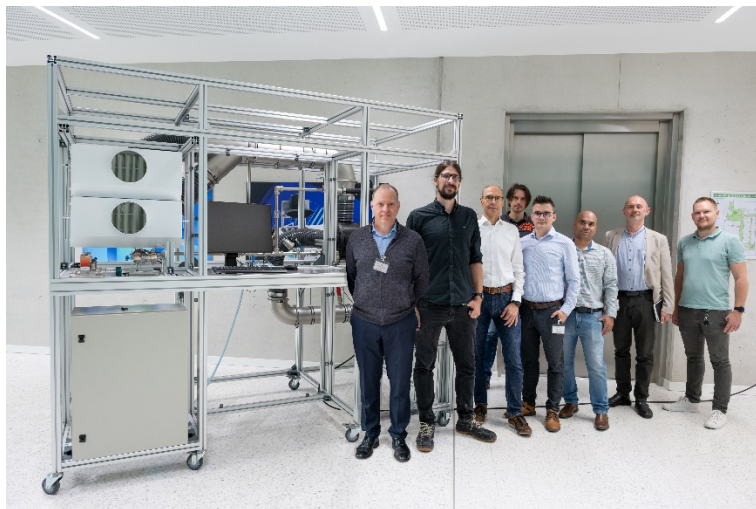
Parker Hannifin

Phone: +27 (0)11 961 0700

Email: lisa.debeer@parker.com

Parker and Fraunhofer Announce Renewed Partnership to Advance Fuel Cell Air Filter Technology

New air test rig is a major milestone for fuel cell development



From left to right: Gregory Brickett, General Manager EMFE (Parker), Dr. Jonas Schramm, Fraunhofer, Hydrogen Technology Group, Burkhard Hartmann, Parker EMFE R&D Stuttgart Officer, Roman Kusnezow, Design Engineer, Fraunhofer, Robert Jozsa, Parker EMFE, Product Manager Alternative Technology, Appa Pawar, Project / Design Engineer (Parker), Dr. Gunther Kolb, Fraunhofer Institute, Head of Business Division Energy, Kevin Schäfer, Project Engineer (Fraunhofer)

Stuttgart / Mainz Germany, 29th August 2024 – Parker Hannifin and the Fraunhofer Institute for Microengineering and Microsystems (IMM) today announced the renewal of their partnership to further develop air adsorption technology for fuel cell humidification applications.

Gregory Brickett, General Manager, Engine Mobile Filtration Europe (EMFE) Division, said: “This collaboration builds on the successful partnership which started in October 2022, and which led to significant advancements in fuel cell technology, including the development of a specialized test rig.”

Fuel cells are a crucial technology for clean energy because they generate electricity through a catalytic reaction of hydrogen without combustion of fossil fuels, producing only water and heat as byproducts. However, for fuel cells to function effectively, the air entering them must be free of contaminants. The test rig developed in the previous phase of the partnership allows Parker and Fraunhofer to ensure that filters used in fuel cells can effectively remove harmful gases such as NOX, SOX, ammonia, and volatile organic compounds.

This improvement is essential for enhancing the efficiency and lifespan of fuel cells, making them a more viable and widespread solution for reducing carbon emissions and reliance on fossil fuels.

Building on Parker’s track record of developing membrane filtration solutions for a variety of applications, including fuel cells, this new phase of the partnership aims to push the boundaries of what current filtration technology can achieve. Fraunhofer, the world's leading applied research organization, plays a major role in this field by commercializing its findings in business and industry, prioritizing key future-relevant technologies.

Burkhard Hartmann, R&D Officer at Parker’s Engine Mobile Filtration Europe (EMFE) Division in Stuttgart, said: “Our renewed partnership with Fraunhofer represents a continued commitment to advancing fuel cell technology. The progress we've made with the test rig has provided invaluable insights, and we are excited to build on this foundation to develop even more effective filtration solutions. By simulating real-world conditions, we can optimize our filter media to meet the rigorous demands of fuel cell applications, ensuring the best performance and durability for our customers.”

Dr. Gunther Kolb, Head of Business Division Energy at the Fraunhofer Institute for Microengineering and Microsystems, commented: “This ongoing

collaboration with Parker demonstrates the powerful synergy between applied research and industrial expertise. The advancements we have achieved so far underscore the potential of combining Fraunhofer's research capabilities with Parker's filtration technology. We look forward to continuing our work together to create more efficient and reliable fuel cell systems.”

The renewed partnership will focus on:

- Development and implementation of new specialized air filter test rigs
- Continued efficiency evaluations of Parker-designed fuel cell humidifiers
- Advanced performance simulations to understand the effects of fibre dimensions and permeability on the humidifiers

Learn more about Parker's Filtration solutions at: [Engine & Mobile Filtration Division EMEA](#)

About Parker Hannifin

Parker Hannifin is a Fortune 250 global leader in motion and control technologies. For more than a century, the company has been enabling engineering breakthroughs that lead to a better tomorrow. Learn more at www.parker.com or [@parkerhannifin](https://twitter.com/parkerhannifin).

About Fraunhofer

The Fraunhofer Gesellschaft, based in Germany, is the world's leading applied research organization. Prioritizing key future-relevant technologies and commercializing its findings in business and industry, it plays a major role in the innovation process. A trailblazer and trendsetter in innovative developments and research excellence, it is helping shape our society and our future. Founded in 1949, it currently operates 76 institutes and research units throughout Germany. Over 32,000 employees, predominantly scientists and engineers, work with an annual research budget of €3.4 billion. Fraunhofer generates €3.0 billion of this from contract research. <https://www.fraunhofer.de/en/about-fraunhofer.html>

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