

CASE STUDY

Hephas Energy HS-Series Equipped with MegaEIS™ for PEMFC Stack Performance Diagnosis

As the demand for high-performance and high-power fuel cell stacks for heavy-duty vehicles continues to grow, precise analysis and optimization have become essential. Hephas has integrated Kolibrík's multi-channel EIS (Electrochemical Impedance Spectroscopy) technology into the HS-series fuel cell stack testing system. With advanced impedance analysis capabilities, the EIS function enables researchers and engineers to gain deeper insights into stack performance, degradation mechanisms, and efficiency improvements, making it an indispensable tool for fuel cell development and validation.

Hephas has introduced the HephaStation stack testing bench, a popular standard in fuel cell stack testing systems.

"We are committed to delivering the best solutions on the market, so we have carefully evaluated various options before selecting Kolibrík's multi-channel EIS technology. The Kolibrík MegaEIS™ System meets all demanding requirements for accuracy, high currents, and high power in fuel cell stack analysis," says the CEO of Hephas Energy, Jerry Chen.

"We really appreciate Kolibrík's R&D and support team as they provide very quick support and allow smooth implementation when it is needed. They are always willing to help satisfy our customer's specific needs," adds Senior SW Manager, Adam Lo.

The HephasStation is suitable for following applications:

- PEMFC/PEMEC short stack or long stack research
- Stack design validation and performance measurement
- Operation parameter sensitivity testing and accelerated stress testing
- Stack long term durability testing

Hephas Energy also designs and manufactures test stations for single-cell testing. For these, Kolibrík high-current potentiostats with EIS are a perfect match and allow analysis of the single cells within fuel cells and electrolyzers, further assisting end customers in optimizing and improving the efficiency.



Hephas Energy is one the leading hydrogen and fuel cell test equipment supplier of test stations for PEMFC/SOFC fuel cells and electrolyzers. The product portfolio including from MEA, short stack and large stack up to 300kW.

About Kolibrík

Kolibrík.net offers a complete range of electronic solutions and testing equipment for the hydrogen industry, specializing in H2 technology design, optimization, high-power fuel cell stack and electrolyzer testing, stack control system development, cell voltage monitoring, power conversion, and more.

www.kolibrík.net