

CASE STUDY

MegaEIS has optimized the operation of the electrolyzer at the EC Elbląg Power Plant - Energa, Grupa Orlen

For more than 15 years Institute of Power Engineering (Poland) conducts studies, related to solid oxide cells, in a wide spectrum of problems, from the fabrication of cells up to SOFC and SOEC stacks and SOFC-based cogenerative (CHP) system. There was a need to replace general purpose data acquisition units in automation and control boxed with dedicated ones. They selected solution from Kolibrík, starting with **TEVOMET TV16 and CVM-24P units and later with MegaEIS.**

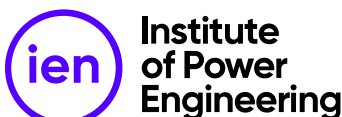
Data acquisition solutions MegaEIS with electrochemical impedance spectroscopy has been chosen to test of the kW-class SOFC and SOEC stacks and allows to operate at up to 150 A and 55 V. It was successfully used in field conditions, in running experimental 10 kW reversible SOC-based installation, integrated with EC Elbląg Power Plant (Energa, Grupa Orlen).

„We use Kolibrík’s Cell Voltage Monitoring System because of their reliable system that offers better operability and fits better our needs than general data acquisition units in automation. Additionally, MegaEIS allows detailed characterisation and optimisation of the stacks and has helped to optimized 10 kW reversible SOC-based electrolyzer that it is placed at Elbląg Power Plant,” evaluates the cooperation dr hab. Yevgeniy Naumovich.



A two-way hydrogen production installation of an electrolyzer integrated with a combined heat and power plant, based on solid oxide cells, was opened in Elbląg (north Poland). The facility can produce green hydrogen and act as a fuel cell, converting hydrogen into electricity, and be used as an energy storage facility.

Cell voltage monitoring is an inexpensive characterization method, which can run under operation and without interruptions, providing real-time information about electrolyzer stack’s health. While EIS analysis provides detailed characterization that allows the optimization and to improve the performance and efficiency of the system.



The Institute of Energy - Research Institute (IEn) is one of the largest institutes in Poland conducting research in the field of energy technology. The Institute is a modern research and implementation centre under the Ministry of Climate and Environment. The mission of the Energy Institute is to develop innovative technologies leading to a sustainable and secure energy system.

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