Hydrogen cell research at Faculty of Engineering and Information Technology of the UP to stabilize energy supply

The faltering security of supply linked to fossil fuels, global warming and the exploitation of renewable energy sources are focusing attention on the storage of intermittent surplus energy. To this end, research is being carried out in the Renewable Energies National Laboratory project, which was inaugurated in June 2022 at the Faculty of Engineering and Information Technology of the University of Pécs. The National Laboratory will support the achievement of Hungary's decarbonization goals, and in the next 3 and a half years, the UP, as consortium leader, will work with 9 partners to establish a scientific and technological, legal, economic and industrial property base for low environmental footprint energy technologies, especially hydrogen technologies and carbon dioxide utilization. In order to achieve the goals set out in the international and national plans, a large number of qualified professionals will be needed, which is why the Faculty of Engineering and Information Technology of the UP was the first and only institution in the country to launch the Fuel Cell and Hydrogen Technology Engineer/Specialist Advanced Training in February 2022, which is already attracting great interest.

The recently unfolding international conflict and the resulting energy crisis have further increased the demand for renewable energy and the importance of energy storage. Hydrogen from water decomposition can be used to store energy produced by solar, wind or nuclear power, while fuel cells can be used to convert it into electricity.

The deployment of this new technology could make a significant contribution to increasing Hungary's energy security,

as it supports the multi-legged nature of the system, in particular the expansion of solar capacity, while preserving nuclear generation.