



 **Damien GUILBERT**

From France to Finland 

Project: **Effect of power electronics on the electrolyzer operation**

Research topic: **Engineering**

Finnish Institution: **Lappeenranta University of Technology (LUwT)**

French Institution: **University of Lorraine**

Dates of mobility: **01/05/2022 to 08/05/2022**

Program: **Maupertuis Programme**



## PRESENTATION

[Damien Guilbert](#) received the M.Sc. degree in electrical engineering and control systems and the Ph.D. degree in electrical engineering from the [University of Technology of Belfort-Montbéliard \(UTBM\)](#), France, in 2011 and 2014 respectively. Since September 2016, he has been an Associate Professor at [Université de Lorraine](#) and a permanent member of [GREEN](#) (Group of Research in Electrical Engineering of Nancy) laboratory. Besides, he obtained his “habilitation à diriger des recherches (HDR)” degree in electrical engineering in 2022. Damien Guilbert focuses on power electronics, energy storage systems (ESS), fuel cell, and electrolyzer system, modeling and control of alkaline and proton exchange membrane electrolyzers, and energy management within hybrid renewable energy systems relying on hydrogen buffer storage.

## ACTIVITIES IN FINLAND

During his stay, Damien Guilbert visited [LUT Campus](#), [Department of Electrical Engineering](#) and [GREENRENEW](#) Platform. He had the opportunity to discuss with [Prof. Jero Ahola](#), [Dr. Vesa Ruuskanen](#), [Dr. Antti Kosonen](#), [Prof. Pertti Kauranen](#), and the junior researchers of their research team. He also exchanged with Dr. Vesa Ruuskanen and Dr. Antti Kosonen to start research cooperation focused on the effect of power electronics on the electrolyzer operation (e.g. power quality, current ripple, degradation).

Thus, the research stay allowed Damien Guilbert to exchange with his colleagues and junior researchers about different topics: research cooperation focused on power electronics for electrolyzers supplied by renewable energy sources, common research papers and projects, research stays at LUT and the University of Lorraine addressed for senior and junior researchers, and co-tutelle PhD Thesis. All these fruitful discussions led to start cooperation between the researchers from the LUT and GREEN research team.