

# **PELS Award for Prof. Marco Liserre's outstanding findings in the field of power electronics**

**Professor of Power Electronics and Deputy Director of Fraunhofer ISIT receives Power Electronic Society Award**

Since 2011, the (Institute of Electrical and Electronics Engineers (IEEE) has presented the Power electronic society (PELS) Award "R. David Middlebrook Achievement Award" for outstanding research in the technical field of power electronics. This year, the jury honored Prof. Marco Liserre, Deputy Director of Fraunhofer ISIT and Head of the Chair of Power Electronics at Christian-Albrechts-Universität zu Kiel. He was honored for his findings on the stability of power grids dominated by power electronics. Since 2000, the scientist has been using his findings to help optimize the connection of power converters to the electrical grid, particularly with regard to stability issues. His modeling approaches are frequently used by grid operators and manufacturers of grid-interactive power converters. Liserre received the award on November 1 at the IEEE Energy Conversion Congress in Nashville, Tennessee (USA).

## **Research genesis Liserres**

Marco Liserre has been investigating the connection of power converters to the electrical grid since 2000. In doing so, the scientist focuses primarily on the aspect of stability issues. His modeling approaches are now widely used by grid operators and manufacturers of grid-connected power converters (e.g. for large wind/photovoltaic plant as well as storage systems). In 2010, Liserre began his research on improving the reliability of power electronics. The focus of his work is mainly on active reliability. This demonstrates the possibility of using reactive power in wind turbines to control temperature fluctuations and the associated reliability of power semiconductor devices. This approach is used today in electric vehicles, among other applications.

In 2013, the PELS Award winner began gathering insights in the field of smart transformers to control power flows in hybrid and meshed grids. In the process, Liserre's pioneering work showed that the hidden capacity of the grid can be tapped. For this, the current deputy director of Fraunhofer ISIT received the Consolidator Excellence Grant, a funding awarded in Europe in the field of power electronics and power systems.

## **Double award unique**

Prof. Marco Liserre has already received prestigious awards in the past, including the 2018 Eugene Mittelmann Achievement from the IEEE Industrial Electronic Society for his research on the development of power electronic systems for distributed generation and power quality improvement. This makes Marco Liserre the only current recipient of both awards.

## **R. David Middlebrook Achievement Award**

The Power Electronics Society (PELS) is a rapidly growing technical society within IEEE that has been driving development and innovation in power electronics for over 35 years. With the R. David Middlebrook Achievement Award, established by IEEE PELS in 2011, recognizes exceptional contributions to power electronics, such as the development, simulation, design-oriented analysis, and application of electronic devices. The award honors individuals who have made significant achievements in areas such as modeling, control, and regulation.