



AALBORG UNIVERSITY
DENMARK

PhD Position in High Efficiency Central Inverters for PV Applications

Within the Science without Borders programme, Aalborg University is offering a PhD position at the Department of Energy Technology, Pontoppidanstræde 101, DK-9220 Aalborg East.

The position is administrated by "Science without borders" and financed by stipends through CAPES. The overall theme is "Renewable Energy". Acceptance of employment is on condition of the grant from CAPES.

Description: SiC and GaN technologies have the potential to substantially reduce the switching losses and simultaneously increase the switching frequency and in consequence, lower the cost of PV inverters without the need of big cooling systems and with very compact passive filters. GaN has better potential for improving the string PV inverters using 600V devices while SiC has big potential for higher power central inverters with a DC-link voltage of 1200V or higher.

The goal of this PhD project will be to model the switching and conduction losses in case of new devices, based on SiC and GaN and investigate which topology is suitable for central inverters in PV applications focusing on the reduction of the inverter costs. The project should be finished with an experimental validation of the chosen topology and device technology.

Requirements

The PhD candidate should have an MSc degree in Power Electronics and experience with modeling and design of power converters and design of PCB boards. The candidates should write and attach a report to the application, in which they focus on the topic of central and mini-central inverters for PV plants, reviewing the advantages and disadvantages of the different topologies in today's commercial central inverters (topologies, PWM, etc.). Special focus should be given also to wide-bandgap devices like SiC for example and the advantages that these new devices could offer.

Contact person: Associate Professor Tamas Kerekes, e-mail: tak@et.aau.dk

To apply please see the link below:

<http://www.en.tek-nat.aau.dk/vacant+positions/Science+without+Borders/>