



**Post-doc Researcher position (2 years) at the University of Liege (Belgium)
Department of Electrical Engineering and Computer Science**

“Development of a hybrid battery / supercapacitor energy storage system for a microgrid”

The Department of Electrical Engineering and Computer Science at the University of Liege (Belgium), is seeking a motivated scientist for a post-doctoral researcher position within a new research project aiming at developing a microgrid prototype involving a hybrid battery / supercapacitor energy storage. The whole project involves other scientists at the University of Liege (that are responsible of the management of power flow) as well as electricity and power electronics companies.

Job description:

The post-doctoral project (2 years) will concentrate on the development and the optimization of the hybrid supercapacitor (ultracapacitor) / battery energy storage system used for a microgrid. A battery pack will be responsible for the main bidirectional energy flow within the microgrid, while supercapacitors will be used to provide fast peak power. The energy and power levels associated to the supercapacitors are of the order of 1 kWh and 100 kW. The work will mainly include:

- the choice and the design of the supercapacitor bank needed to meet the system requirements;
- the design and the implementation of the power electronics circuit used for power flow between the battery pack and the supercapacitor;
- the design and the implementation of an electronics circuit used for monitoring the current, voltage, temperature and the charge level of both the battery pack and the supercapacitor bank;
- the development and implementation of an electronics circuit used for overvoltage / thermal runaway protection of both the battery pack and the supercapacitor bank, and comparison with commercial protection circuits;
- the tests on a first low voltage prototype, followed by tests on a full size prototype in the microgrid.

Qualifications:

- PhD in electrical engineering (or equivalent);
- Experience and strong interest in power electronics as well as practical work;
- Ability to work independently and to be a part of a dynamic group;
- Good communication skills in English, both written and spoken.

Environment:

The work will be carried out in the Department of Electrical Engineering and Computer Science, Faculty of Applied Science at the University of Liege (Belgium). The postdoc researcher will be included in both the “Measurement and instrumentation” laboratory and the “Systems and modeling” (SYSTMOD) research group. He/she will work in close collaboration with the power electronics “CE+T” company.

Terms of employment:

The terms of employment will be in accordance with those of post-doc researchers at the University of Liege.

Starting date and duration:

June 1st, 2016, or upon agreement. The position is a post-doc grant for a duration of 2 years.
The application deadline is May 15, 2016.

How to apply?

Please send your application including a CV including a publication list, to Philippe Vanderbemden (Philippe.Vanderbemden@ulg.ac.be) or to the address below.

Philippe Vanderbemden
University of Liege, SUPRATECS
Measurements and Instrumentation Laboratory
Department of Electrical Engineering and Computer Science
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Belgium

Further information:

For further information about the research project, please contact
Philippe Vanderbemden (Philippe.Vanderbemden@ulg.ac.be), tel. +32 4366 2670.

For further information about the research environment, you can also visit the following websites:

Systems and Modeling (SYSTMOD) research group : <http://www.montefiore.ulg.ac.be/systmod/>
Measurements and Instrumentation Laboratory : <http://www.montefiore.ulg.ac.be/services/vdb/>
CE+T company: <http://www.cet-power.com/>