



AALBORG UNIVERSITY
DENMARK

PhD Position within hydrothermal liquefaction of lignocellulosic feedstocks

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

The position is administered and funded by the “Science without Borders” program through the Brazilian Federal Agency for Support and Evaluation of Graduate Education (CAPES). The theme of focus related to the position is listed as “Renewable Energy in the program. Acceptance of employment for the position is subject to the approval of grant from CAPES.

Common background

A primary focus for BioEnergy activities at the Department of Energy Technology (ET) is the sustainable production of 2G drop-in biofuels through hydrothermal liquefaction (HTL). As documented through literature as well as the work carried out at ET, HTL has proven to be a very interesting and promising alternative to other biofuel production routes. A major advantage of HTL is the high degree of feedstock flexibility, allowing it to convert feeds ranging from lignocellulosic biomass residues over dedicated energy crops to household and other organic waste streams. To significantly accelerate research in this topic, ET has invested more than €1 million in a new continuous HTL utility (the CBS1), which will be able to process biomass feedstock at a rate of around 25 kg/h at advanced process conditions. The unit will be installed at the ET labs in 2Q 2013. At the time of installation, it will represent the most advanced HTL research platform available for university research. To supplement this, feedstock preparation facilities as well as product analysis equipment is in place. Furthermore, full test of transport grade biofuels can be performed in engines and turbine test stands within the laboratory. The work carried out at ET is done in collaboration with both industrial entities and university partners in an international environment. For the topic described below, international exchange will be a part of the work. Furthermore, as the working language will be English, proficiency hereof should be documented. Applicants may be selected for Skype interviews prior to being offered any position. All applicants should document academic qualifications at Master or Master of Science level.

Description: This topic focusses on the hydrothermal reactions. However, the focus is to investigate these through analytic and semi-empirical methods. The purpose of the work is to provide input to a modelling platform, where the complex interaction of the parallel and sequential reactions will be implemented based on input from literature, results from topic 2 and other ongoing research activities at ET. The intention is to develop a process modelling tool, which can give reliable indications of the impact of process design and operating conditions on product yield and composition.

Requirements

Applicants with a chemical or chemical engineering background will be preferred. Modelling competences in any form – thermodynamic, process, computational fluid dynamics and the like - should be documented.

Contact: Professor Lasse Rosendahl, e-mail: lar@et.aau.dk

To apply please see the link below:

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