



Energy Academy Europe PhD Program - Biobased Economy

Energy Academy Europe (EAE) is a public-private partnership initiated by University of Groningen (UoG), Hanze University of Applied Science, Gasterra and Energy Valley in 2011.

The ambitious goal of this program is to develop an innovative and interdisciplinary PhD program which addresses the complex challenges in energy transition, on the basis of:

- Excellence in a broad range of disciplines, including physics, chemistry, ecology, biology, engineering and technologies, environment science, social science, law, economics etc.
- Vast cooperation with relevant knowledge centers in the Netherlands, the EU and with leading centers around the world.
- Continuous dialogue with international organizations, industrial partners and governments.
- A strong interdisciplinary training environment, providing platforms for collaboration, fostering exchange of concepts and methods.

The EAE and Northwest A&F University signed an agreement in 2014. To intensify the collaboration and the mutual understanding both parties are agreed to develop a PhD training program on Biobased Economy. The EAE focuses on, but not limited to, the following research areas:

- 1) the technical, economic and implementation potential of biomass resources (organic wastes, biomass residues from agriculture and forestry, cropping systems) for energy and materials, geographically and in time, taking into account needs for urbanisation, food production and protection of biodiversity;
- 2) Combined production of biomass for food, feed, biomaterials and energy, as well as multifunctional land-use, such as restoration of degraded and marginal lands and valorisation of (organic) waste streams and biomass residues.
- 3) Optimising biomass energy and material production and conversion systems, including organisation and optimisation of logistics;
- 4) Possibilities and development of novel and improved bio-energy technologies, processes and systems, including biorefinery concepts for production of biomaterials and chemicals and multi-fuel and poly-generation concepts, combinations with carbon capture and storage (Bio-CCS), etc. This can also include chemical- and biocatalysis, microbial fermentation and micro- and macro algae production concepts and thermochemical conversion technologies.
- 5) Full impact analysis of biomass production and utilisation on different scales (local, regional, national) covering environmental (e.g. greenhouse gas balances, water use, biodiversity, soils, nutrients) and socio-economic (employment, rural economic development, market impacts on e.g. food and land, etc.).
- 6) Implementation and good governance of bioenergy and biomaterial systems over time in relation to natural resource use and (rural) development, including the development of certification systems for sustainable biomass energy production.

For each research area, several individual research projects can be developed on the basis of candidates' own motivations. According to the Dutch education system one PhD project will last 4 years when the candidate plans to obtain a degree from the Netherlands. PhD degree will be awarded by University of Groningen.

Eligible candidates must:

- receive CSC scholarships
- have MSc degrees before starting their PhD projects
- have strong background of knowledge in chosen projects
- be able to communicate fluently in English (oral and verbal)
- be interested in interdisciplinary researches on energy

All benefits of CSC PhD candidates at UoG:

- ✓ Tuition waiver



- ✓ Living allowances, 400 euros per month
- ✓ Provide research funding
- ✓ Supervision of each PhD student via a supervisory board composed by professors from different faculties, universities or research institutions and companies when applicable
- ✓ Participation in regular interdisciplinary workshops/seminars on energy topics
- ✓ Participation in energy winter/summer schools
- ✓ Training courses in specialized methods
- ✓ Excursion to and dialogue with industrial partners or government organizations
- ✓ Participation in international conferences
- ✓ Active participation in initiating or organizing a meeting in Groningen
- ✓ Participation in a free elementary Dutch language course
- ✓ Participation in soft skill courses (presentation, scientific writing etc.)

Interested candidates may inquire information of PhD positions through André Faaij (andre.faaij@energyacademy.org) and Wanli Zheng (zheng.wanli@energyacademy.org). When applying for a PhD position, please provide the following documents:

- an updated CV
- research motivations
- academic records
- proof of English proficiency (e.g. published English articles/papers, TOEFL, IELTS. For an interview it's not necessary to provide a certificate of English test, but it's a must to get CSC scholarships.)