NTNU

Kunnskap for en bedre verden

Jobbnorge-ID: 150274
Søknadsfrist: Closed
Nettside:
Omfang:
Varighet:

PhD position in modelling of bio refinery processes

A PhD position is available at the Department of Chemical Engineering. The appointment has a duration of 3 years with the possibility of until 1-year extension with 25% teaching duties in agreement with the department. The position is financed by Norwegian center for Sustainable Bio-based Fuels and Energy Center.

Information about the department

The current research fields at the Department includes catalysis, colloid and polymer chemistry, environmental engineering and reactor technology and process systems engineering. Information about the department is available at: http://www.ntnu.edu/chemeng

The Process systems engineering (PSE) group has modelling as a main activity and is known for its ontology-based approach to computational engineering and multi-scale modelling. Previously the group was leading an Framework 7 project on the modelling of polyurethane foams from quantum to mechanical properties. Currently the group is also provides the ontology background to the the European 2020 project Projects:MarketPlace which aims at implementing a computing center in the European Union for model-based computations

Job description

The position is funded by the Norwegian center for Sustainable Bio-based Fuels and Energy Center (link: https://www.nmbu.no/en/services/centers/bio4fuels/about).The center has the task to establish a broad research activity in energy-related bio-conversion activities, this in the light of the long-term objective to move towards a low-carbon society. Whilst the name induces a focus on fuels, the center aims beyond namely towards green chemistry. The Center is a cooperation of seven major Norwegian research institutions, a number of public bodies (communities) and a large number of industries as well as a number of international partners.

The Process Systems Engineering Group of the Chemical Engineering Department of the Norwegian University of Science and Technology has the task to establish tools for the modelling of bio-refineries, which includes all aspects of process modelling for process selection, design, unit design, plant simulation, controller design and operations. The approach uses a set of tools that establish the ontology and provide a high-level modelling tool automatically generating the simulation code.

The project is highly interdisciplinary exposing the student to computer science, chemical engineering, biotechnology and biology. We will apply the ontology approach to bio-refineries by implementing an ontology for this class of processes, which is rich enough to capture all relevant aspects and utilise it for the simulation of typical plants as they are published and used in the context of the center. This involves the use of the ontology design tool and the generation of the context-dependent model equations and adding descriptions of the ongoing biological and chemical reaction systems.

Qualifications

A suitable candidate should:

- have a Master degree in Physics, Chemical Engineering or a similar field
- be interested in modelling of physical/chemical/biological systems
- have a strong background in computer science, physics and biology
- be highly motivated to perform research
- have a grade averaged of minimum overall B corresponding to 120 credits
- have excellent knowledge of written and spoken English

The successful candidate should in addition be creative, with a strong ability to work problem oriented. He/she should also enjoy interdisciplinary research and take keen interest in learning and working in teams.

The regulations for PhD programmes at NTNU state that a Master degree or equivalent with at least 5 years of studies and an average grade of A or B within a scale of A-E for passing grades (A best) for the two last years of the MSc is required. Candidates from universities outside Norway are kindly requested to send a Diploma Supplement or a similar document, which describes in detail the study and grade system and the rights for further studies associated with the obtained degree: http://ec.europa.eu/education/tools/diploma-supplement_en.htm

The position requires spoken and written fluency in the English language. Applicants from non-English-speaking countries outside Europe must document English skills by an approved test. Approved tests are TOEFL, IELTS and Cambridge Certificate in Advanced English(CAE) or Cambridge Certificate of Proficiency in English (CPE).

Terms of employment

The appointment of the PhD fellows will be made according to Norwegian guidelines for universities and university colleges and to the general regulations regarding university employees. Applicants must agree to participate in organized doctoral study programs within the period of the appointment and have to be qualified for the PhD-study.

NTNU’s personnel policy objective is that the staff must reflect the composition of the population to the greatest possible extent.

The position as PhD is remunerated according to the Norwegian State salary scale. There is a 2% deduction for superannuation contribution.

Further information can be obtained from professor Heinz Preisig, Department of Chemical Engineering, NTNU, E-mail: Heinz.Preisig@chemeng.ntnu.no

The application

Applications with CV, certificates from both Bachelor and Master, possible publications and other scientific works, copies of transcripts, (copies of documentation on English language proficiency test) and reference letters should be submitted.

Applications must be submitted electronically through this page.
Applications submitted elsewhere will not be considered.

The reference number of the position is: **NV-48/18**

Application deadline: 20 April 2018

Tilleggsinformasjon

Arbeidssted: