



NTNU
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Sustainable Industry Development at Mongstad: Towards an Industrial Symbiosis

Statoil's refinery, located in Mongstad north of Bergen, has no near-site partners that could utilise its 600 MW of waste heat or the ammonia and other unused resources at the facility. Management sees the poor energy utilization as a major competitive disadvantage and has therefore approached NTNU to develop and evaluate ideas for the creation of new industrial activities at Mongstad. The aim is to look at the refinery's waste streams as resources and utilize or extend, if necessary, the available infrastructure, thus increasing the "industrial symbiosis" resulting in an "eco-industrial estate" of which Statoil's refinery in Kalundborg is one of the most well-known examples. The Industrial Ecology programme coordinates NTNU's contribution to this project. Other partners include SNF, a socioeconomic research institute connected to the Norwegian Business University (NHH) and the University of Bergen.

NTNU's role in the project will be two-fold. On the one hand, NTNU will provide ideas for new businesses, which can utilize these resources and develop some of these ideas to specific proposals. On the other hand, NTNU will develop a model of mass and energy flows at the facility, so that changes required by new processes can be evaluated in their dimension, their contribution, and their ability to increase eco-efficiency. We are looking for innovative individuals with strong communication skills and a creative mind.

PhD student:

Dept. of Chem. Engineering and Industrial Ecology Program

The Process Systems Engineering group, being part of the Dept. of Chemical Engineering, offers a PhD position on this project. In the first phase, the goal will be to get a good overview by modeling the overall plant. With the project aiming at providing decision support for the management, the follow up work is to analyse different alternatives for extending and modifying the plant and its operational environment. Modelling will be done with state-the-art modeling tools, which allow to model plants one to two orders of magnitudes faster than traditional technologies.

Applicants must hold a MSc. ("sivilingeniør") degree or equivalent. Due to the width of the project definition, the background of applicants may vary on a similar scale. The PhD program includes a course program in which the candidates are tuned into the specifics of the application field. We are primarily looking for an outstanding individual who is motivated and a good team player. Good people and communication skills are essential in this project.

For additional information please contact Professor Heinz Preisig ,

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Additional information about the department is found on the internet:

<http://www.chemeng.ntnu.no>

General Information on the PhD Position:

Appointments will be made in accordance with the regulations in force concerning State Employees and Civil Servants of Norway.

The positions are remunerated according to wage level 38 on the Norwegian State salary scale, with a gross salary of NOK 287.500,- per year. Two percent of the salary will be deducted at source as an obligatory premium to the Norwegian State Pension Fund.

The fellowship is for a period of three years and nine months.

NTNU has the ambition to increase the representation of women among academic staff, and particularly encourages female applicants. The appointment of the PhD fellow will be made according to Norwegian guidelines for universities and university colleges. Applicants are obliged to engage on an organized PhD training program, and appointment requires approval of the applicant's plan for a PhD study. The Fellow and the University must sign a mutual contract regarding the period of appointment and the obligations of the PhD fellow.

Each applicant is to send 3 copies of the application with certified copies of certificates, testimonials and a list of academic work - published or unpublished - that has relevance to the evaluation of the applicant's qualifications. The application should include information on education, such as examination results in the form of certified copies together with a summary of the accumulated professional experience. Collaborative work will also be evaluated though the applicant's contribution must be clearly documented. The application should also include information on why the applicant considers him- or herself specifically suited for the fellowship.

Please send applications to the Norwegian University of Science and Technology (NTNU), Faculty of Sciences and Technology, N-7491 Trondheim, Norway, no later than **09.07.2005** citing the fellowship's reference number NT-32/05 clearly on the application.