

Professor in Experimental Physics of Catalysis

DTU Physics at Technical University of Denmark (DTU) invites applications for a position as professor in experimental physics of heterogeneous catalysis. The professor will conduct research, teaching, and innovation within this field.

The professor will be part of the [Section for Surface Science and Catalysis](#) which conducts research in catalysis for conversion of sustainable energy and environmental protection and is part of the large-scale [V-SUSTAIN](#) initiative. The section consists of six faculty members and is one of six sections at DTU Physics.

As professor, you will focus on fundamental insight in catalysis with the goal of discovering new and more efficient catalysts for sustainable energy and protection of the environment. The goal is also to develop new and highly sensitive methods for measuring catalytic activity and selectivity of new catalysts, allowing for identification of desirable active sites for further optimization. These methods will bring fundamental insight into both conventional thermal catalysis, but also into electro-catalysis and photo-electro-catalysis.

Responsibilities and tasks

Your responsibility will be to develop new methods for identifying the most active and selective catalysts, preferably sensitive on the atomic level. You will also maintain and further develop the experimental equipment used for characterization and test of new heterogeneous catalysts produced in the section. In the context of development of new methods and catalysts, you should have an eye for innovative aspects of your research, identifying whether new insights can be capitalized in the form of intellectual property (IP) rights, spin-off companies, or in direct collaboration with existing industry. In order to realize such goals, you must not only have scientific skill and creativity, but also a talent for commercialization and fundraising skills.

Your responsibilities will be to perform basic research that has a clear technological goal that is fundamental in nature with a clear technological goal.

- Your responsibility will be to aim at breakthroughs within the above-described field
- Your responsibility will be to publish high impact results improving State-of-the-Art
- Your responsibility will be to have a sharp focus on innovative and commercial aspects that may potentially lead to patents and spin-off companies
- Your responsibility will be to raise the necessary funding for such research

You will also have responsibilities for developing teaching and teach at all levels in courses offered by DTU Physics.

- You will be responsible for developing new courses
- You will be responsible for supervising BSc, MSc, and PhD students
- You will be responsible for communicating your results on various levels in an understandable manner, ranging from public outreach to conference contributions

The research in the SurfCat section is conducted in a close collaboration since it demands an interdisciplinary approach. Most projects involve several group members. In addition, many projects embrace collaboration with other groups at the department, at other departments of DTU or in collaboration with other research groups nationally and internationally both in companies or at universities. Substantial collaboration is already established through V-SUSTAIN and with a number of companies. You are expected to work in this highly collaborative framework and contribute to its further development.

Qualifications

You must have a strong track record in the field of experimental heterogeneous catalysis with an emphasis of developing new experimental approaches. You must be experienced in thermal catalysis and in at least one of the two sub-fields Electro-catalysis and Photo-Electro-catalysis. This must be manifested by a substantial scientific production published in high-impact journals. You should also have experience with IP and commercialization. IP experience could be documented through patents or patent applications while commercialization experience could be documented via participation in start-up companies and ideally also via successful commercial fundraising activities. Similarly, you must have a successful track record of submitting scientific grant applications either as PI or as co-PI. You must have international research experience through, for example, working in different environments. Furthermore, you must have documented teaching experience, teaching physics courses at the introductory level to the PhD level. Beyond those qualifications, we also look favorably at:

- the ability to take initiative and leadership
- the ability to motivate and inspire your colleagues
- how you are driven by exploring and expanding boundaries
- how you thrive on collaboration and teamwork
- your ability to communicate in a clear manner
- your ability to identify new opportunities and work innovatively
- your experience with project management and leadership
- your experience with improving state-of-the-art in catalysis research methods or catalysis

Assessment

In the assessment of the candidates, consideration will be given to

- Experience and quality of teaching
- Research impact and experience, funding track record, and research vision
- Societal impact
- Documented innovation activities, including commercialization and collaboration with industry
- International impact and experience
- Leadership and collaboration
- Communication skills

Consideration will also be given to a proven track record and excellence in outreach to the public concerning research results and future sustainable energy solutions on a global scale.

We offer

DTU is a leading technical university globally recognized for the excellence of its research, education, innovation, and scientific advice. We offer a rewarding and challenging job in an international environment. We strive for academic excellence in an environment characterized by collegial respect and an academic freedom tempered by responsibility.

Salary and terms of employment

The appointment will be based on the collective agreement with the Danish Confederation of Professional Associations. The allowance will be agreed with the relevant union.

Further information

Further information may be obtained from Jane Hvolbæk Nielsen, Head of Department, on tel.: +45 4525 3222.

You can read more about DTU Physics on www.fysik.dtu.dk/English

Application procedure

Please submit your online application no later than **XXX 2018 (local time)**. Apply online at www.career.dtu.dk.

Applications must be submitted as **one PDF file** containing all materials to be given consideration. To apply, please open the link 'Apply online', fill in the online application form, and attach **all your materials in English in one PDF file**. The file must include:

- Application (cover letter) addressed to the President
- CV
- A vision for future research
- Views regarding teaching and research based on the 'Assessment' bullets
- Documentation of previous teaching and research based on the "Assessment" bullets
- List of publications indicating scientific highlights
- H-index, and ORCID (see e.g. <http://orcid.org/>)
- Diploma (MSc/PhD)

Applications and enclosures received after the deadline will not be considered.

All interested candidates irrespective of age, gender, disability, race, religion or ethnic background are encouraged to apply.