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The Norwegian University of Science and Technology (NTNU) creates knowledge for a better world and solutions that can change everyday life.

# PhD Fellow within optical sensor technology in the Artificial Pancreas Trondheim research group (code 077-2016)

A PhD Fellowship within optical sensor technology is available at the Department of Electronics and Telecommunications (IET), The Faculty of Information Technology, Mathematics and Electrical Engineering (IME). The position is within the [Artificial Pancreas Trondheim \(APT\)](#) research group. The long term aim of the APT research group is to establish a robust artificial pancreas by combining continuous intraperitoneal (IP) glucose sensing, IP insulin delivery, and robust control algorithms. The "Double Intraperitoneal Artificial Pancreas" project has been included as one out of six research projects in the National Centre for Digital Life funded by the Norwegian Research Council. The candidate will be part of an interdisciplinary research team with broad expertise in medicine (endocrinology, pharmacology, anesthesia and comparative medicine), medical cybernetics, and optical sensor technology.

The PhD project will focus on developing a robust sensor system for reliable IP glucose sensing, in close collaboration with a Postdoctoral Research Fellow and a PhD Candidate. Using sensor fusion, a minimum of two different sensing modalities will be combined to an overall robust sensor system. The sensor system performance will be evaluated *ex vivo* as well as *in vivo* in animal models.

The period of employment for the position is 3 years with a possible extension to a maximum of 4 years, by including teaching duties. The position has the objective of qualifying for higher academic positions. Admission to a doctoral degree program is a requirement for employment as a PhD candidate. For regulations concerning the PhD-degree at NTNU, please see: [http://www.ntnu.no/studieavd/dok/PhD\\_regulations.pdf](http://www.ntnu.no/studieavd/dok/PhD_regulations.pdf).

## Information about the department

Currently IET employs 19 professors, 9 adjunct professors/associate professors, 65 PhD students and 9 post doctors/scientists.

IET has the principal responsibility for education and research in electronics at NTNU. IET encompasses research and education within the areas of photonics, electronic devices and materials, acoustics, radio systems, signal processing, circuit and systems design.

## Requirements of the applicant:

- A MSc or an equivalent in electrical engineering or applied physics with excellent results. Students in their final stage of completing their Master's degree are also invited to apply.
- A strong academic record with a weighted average grade of master's or equivalent education with a grade of B or higher, in accordance with NTNU's grading system.
- Proficiency in oral and written English.

## Emphasis will also be placed on:

- Strong optical science/engineering background and skills in general and strong experimental skills in particular.
- Experience in one or more of the following: optical fiber sensors, biosensors, near- and mid-infrared spectroscopy, Raman spectroscopy, and sensor fusion.
- Documented experience from research projects, and publications in recognized international peer-reviewed scientific journals, presentations at recognized international scientific meetings, and a degree from a reputable university in the field.
- Personal qualities and potential as a researcher.

Being a member of an interactive and international project team, successful candidates should have strong communication and cooperation skills.

## We offer:

- a professional research environment targeting scientific and technological challenges with dedicated colleagues, and
- attractive schemes for housing loan, insurance and pension in the Norwegian Public Service Pension Fund.

Depending on qualifications and academic background, PhD Candidates (in code 1017) at the Faculty of Information Technology, Mathematics and Electrical Engineering will be remunerated at a minimum of NOK 435 100 per year before tax. Normal wage level is NOK 435 100 - 472 700 of which 2% is deducted for the Norwegian Public Service Pension Fund.

The appointment will be made in accordance with current regulations and supplementary rules with guidelines for employment as PhD Candidate appointments at universities and university colleges.

The Faculty of Information Technology, Mathematics and Electrical Engineering wants to attract outstanding and creative candidates who can contribute to our ongoing research activities. A good work environment is characterized by diversity. We encourage qualified candidates to apply, regardless of their gender, functional capacity or cultural background. If necessary, we will adapt the workplace for people with disabilities. Increasing the number of women in academic positions is an important priority for the Norwegian University of Science and Technology.

[More information regarding moving to Trondheim, Norway and working at NTNU.](#)

## How to apply:

Applicants are asked to apply via this page. The application should contain the following attachments:

- The applicants' CV (including list of publications, relevant former positions and references) and copy of relevant transcripts and diplomas.
- The applicant's view of research challenges within the area of the PhD position (up to 1000 words).
- Short statement on the applicant's personal qualifications and motivation for the position.
- Short statement from a former supervisor/tutor/teacher.
- Contact information for two references.
- Other relevant attachments.
- If the applicant has not yet submitted his/her MSc thesis, he/she should instead include a short description of the thesis project, its current status and main findings; and publications that the applicant wishes to be taken into account (joint work must clearly indicate the applicant's contribution).

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](http://ec.europa.eu/education/tools/diploma-supplement_en.htm)

Foreign applicants not having English as native language have to document proficiency in English. The following tests can be used as such documentation: TOEFL, IELTS, or Cambridge Certificate in Advanced English (CAE) or Cambridge Certificate of Proficiency in English (CPE). Minimum scores are:

- TOEFL: 600 (paper-based test), 92 (Internet-based test),
- IELTS: 6.5, with no section lower than 5.5 (only Academic IELTS test accepted),
- CAE/CPE: grade B or A.

Incomplete applications will not be taken into consideration. Chosen applicants will be invited to undergo an interview.

For further information about the position, please contact Professor Dag Roar Hjelme, telephone +47 73 55 96 04 or +47 930 28 272, e-mail: [dag.hjelme@ntnu.no](mailto:dag.hjelme@ntnu.no)

For information concerning the application process, please contact the Head of Office Randi Hostad, telephone +47 73 59 44 02, e-mail: [randi.hostad@ntnu.no](mailto:randi.hostad@ntnu.no)

The appointment is subject to the conditions in effect at any time for employees in the public sector.

Please note that under the Norwegian Civil Service Act, information about applicants may be made public even though the applicant has requested not to be included on the list of applicants.

**Deadline for applications: 21.01.2017**

Jobbnorge-ID: 131632, Søkknadsfrist: Avsluttet