

Jobbnorge-ID: 123141

Søknadsfrist: Avsluttet

Nettside:

Omfang:

Varighet:

PhD position in Theoretical Condensed Matter Physics

A PhD position within the field of theoretical condensed matter physics is available at the Department of Physics. 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 NTNU.

Information about the department

The position is organized in the Department of Physics. Currently, there are 27 professors, 10 associate professors, 7 adjunct professors, 70 PhD research fellows and 24 postdoctoral researchers appointed at the Department of Physics. Further information is available at:

<http://www.ntnu.no/fysikk/english>

Our research spans a broad spectrum of natural sciences and technology, which in turn allows us to offer an education that provides a solid basis for future careers. Physics research is carried out in experimental as well as theoretical fields, often across conventional boundaries between disciplines. Our central research areas are biophysics, nanoscience, surface physics, modern optics, astrophysics, solar energy, materials science, and medical technology. Research staff at the institute makes a special effort to increase the awareness and understanding of the importance and impact of physics in our society.

Job description

The research will be carried out in the division of Theoretical Physics, and will be focused on electronic and nuclear spin dynamics in solid-state nanostructures, motivated by rapid recent experimental progress in the field of quantum information and computation. More specifically, the first research questions are anticipated to concern the so-called 'exchange-only qubit', where quantum information is encoded in the combined spin state of three electrons localized in a triple quantum dot. The aim of the research will be to understand better the (combined) effect of hyperfine and spin-orbit interaction on the performance of the qubit. Numerical simulations of the complex coupled electron-nuclear spin dynamics as well as analytic investigations with simple toy models are expected to be part of the research.

Qualifications

The successful applicant is a highly competent, motivated and ambitious student. The student should hold very good grades and a Master of Science (or equivalent) in Physics or another relevant field and must have a thorough knowledge of basic quantum mechanics and solid state physics. Since part of the research might involve performing numerical simulations, experience with Matlab or Python is preferred. The student also has the competence to carry out goal-oriented work, possesses good skills to deliver oral and written presentations of research results, and has good cooperation abilities.

The regulations for PhD programs at NTNU state that a Master degree or equivalent is required, 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 and C or higher for the BSc. 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/lifelong-learning-policy/ds_en.htm

The position requires spoken and written fluency in the English language. Applicants from non-English-speaking countries outside Europe must document their English skills by an approved test.

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 has a personnel policy objective that the staff must reflect the composition of the population to the greatest possible extent.

The appointment will be made according to the general regulations regarding university employees. PhD research positions are remunerated in salary code 1017, normally at start wage level 50 on the Norwegian Government pay scale, gross NOK 430 200 per year before tax. There is a 2% deduction for superannuation contribution.

Further information can be obtained from Jeroen Danon, Department of Physics, NTNU, e-mail: jeroen.danon@ntnu.no

For information about NTNU and Trondheim, see www.ntnu.no and www.trondheim.no/engelsk

The application

The application should contain a CV, a short statement on the applicant's personal qualifications and motivation for the application (not exceeding 1 page), certificates from both the Bachelor and Master degree, possible publications and other scientific works, documentation on

an English language proficiency test (if applicable), and contact details of two references. Applications must be submitted electronically through this page.

Applications submitted elsewhere will not be considered.

The reference number of the position is: **NT- 25/16**

Application deadline: 30.04.2016

Tilleggsinformasjon

Arbeidssted: