Aalto University is a community of bold thinkers where science and art meet technology and business. We are committed to identifying and solving grand societal challenges and building an innovative future. Aalto University has six schools with nearly 11,000 students and nearly 400 professors. The campus of the School of Science is located on the Otaniemi peninsula in Espoo within the metropolitan area of Helsinki.

The Department of Applied Physics (http://physics.aalto.fi) at the School of Science is seeking a Postdoctoral Researcher (fixed term) in the area of edge-plasma physics in magnetic fusion energy devices to the Fusion and Plasma Physics Group (http://physics.aalto.fi/en/groups/fusion/). The group focuses on experimental and computational plasma physics in magnetically confined fusion experiments. The primary objective of the posted position is improved understanding of the physics of the tokamak edge plasma for controlling power exhaust and plasma-wall interaction in ITER and future burning plasma.

**Job description**

The successful candidate will be utilising existing, state-of-the-art edge codes, like EDGE2D-EIRENE and SOLPS-ITER to interpret measurements taken in present tokamak devices, such as JET, ASDEX Upgrade and DIII-D. Development and implementation of new physics models in these computational tools will be carried out in close collaboration with the theory and modelling teams at these devices. The main objective of the project is to elucidate the physics in radiative power exhaust scenarios and extrapolate the results toward the next-step devices JT60-SA and ITER. The successful candidate will be participating in on-going and planned experiments by interpreting experimental results using the aforementioned edge codes. She or he is expected to train other members of the research team and to instruct students at Bachelor’s through and PhD level. Documentation and publication of the research results in peer-reviewed scientific or technical journals and present results at external conferences, seminars and/or technical meetings are anticipated. The successful candidate is encouraged to pursue independent, but complementary research interests and interact with a broad spectrum of scientists both internally and externally.

**Requirements**

As a successful candidate for this position, you should have:

- PhD degree in plasma physics or closely related field of science
- Experience in computational physics, in particular in high-performance computing
- Experience in carrying out independent research and working in a team environment to achieve programmatic goals in a timely fashion
- Strong publication record in peer-reviewed literature and experience in presenting research results to a large audience
- Good verbal and written communication skills in English are necessary to work in a multidisciplinary team environment, author technical and scientific reports and publications, and deliver scientific presentations

Skills, knowledge and abilities in the following areas are highly desirable:

- Knowledge of edge plasma physics in fusion devices
- Experience in programming languages, such as Fortran and C
- Experience with data analysis programming languages, such as Python and IDL
- Experience with large edge plasma codes, e.g., SOLPS, EDGE2D
• Familiarity with edge plasma diagnostic techniques, and atomic and molecular physics
• Knowledge of tokamak operation and interpretation of experimental data
• Experience collaborating with theorists and plasma modelers

The primary language of communication within the Fusion and Plasma Physics Group is English.

Duration and salary

The fixed term contract is initially for two years, and can, if mutually agreed, be extended for up to four years. The annual workload of research and teaching staff at Aalto University is 1624 hours.

Aalto University follows the salary system of Finnish universities and we provide them upon request. The contract includes Aalto University occupational healthcare.

The position will be located at the Otaniemi Campus of Aalto University and will involve extensive collaboration and possible international assignment/s to experimental facilities in the UK, Germany and elsewhere. Longer-term assignments to these facilities may be discussed at the time of recruitment.

For more Information

For additional information, please contact the head of the research group, Professor Mathias Groth, tel. +358 50 3640 495, or for recruitment-process related questions HR-coordinator Stefan Ehrstedt, tel. +358 50 340 7662. E-mails: firstname.lastname@aalto.fi.

Applying

Please send your application at earliest convenience to the Aalto University recruitment system, by July 6, 2018. A link to the job posting can be found here: http://www.aalto.fi/en/about/careers/jobs/view/1874/.

To apply for the position, please submit your application including the attachment mentioned below as one single PDF document in English through the link https://rekry.saima.fi/aaltohome/application_edit_welcome.html?job_id=1874&field_id=0&place_id=102&did=5900&j=1&lang=en

• Letter of motivation (max. one A4)
• CV (max. two A4s), including references
• Copy of PhD degree and English version of transcript of completed PhD and M.Sc. courses
• List of publications

Aalto University reserves the right for justified reasons to leave the position open, to extend the application period and to consider also candidates who have not submitted applications during the application period.

Living up to our values

As a community of high ethics we want to assure the highest international standard in research, education and teaching. We expect all our community members to respect Aalto values and follow the ethical principles of fair play and integrity in all our activities and the behaviour that we expect from each other. The Aalto University Code of Conduct is applicable to all Aalto community members and it clarifies the values that guide us.