Aalto University is an academic community where sciences and arts meet technology and business. We shape a sustainable future by making research breakthroughs in and across disciplines, creating novel solutions to major global challenges and sparking the game changers of tomorrow. Our community is made up of 12 000 students, 400 professors and close to 4 000 other faculty and staff working on our dynamic campus in the metropolitan area of Helsinki, Finland. Diversity is part of who we are, and we actively work to ensure our community’s diversity and inclusiveness. This is why we warmly encourage qualified candidates from all backgrounds to join our community. Finland is also an exciting place to live, renowned for its nature, its highly educated, family-friendly and life-work balanced society. For more information about living in Finland, please see: https://www.aalto.fi/services/about-finland.


**Postdoctoral Researcher (fixed term) in the area of edge-plasma physics in magnetic fusion devices**

The group focuses on experimental and computational plasma physics in magnetically confined fusion experiments. Within this job posting the research project aims to improve understanding of the physics of the edge plasma in tokamaks by interpretative analysis of measurements in present devices using predictions from state-of-the-art computer simulations. The primary physics goal of these studies is elucidating the physics of the onset of divertor plasma detachment in magnetically confined fusion devices.

**Job description**

The successful candidate is expected to analyze experimental data from the ASDEX Upgrade and JET tokamaks, and to interpret these data using existing plasma edge codes, such as EDGE2D-EIRENE, SOLPS-ITER and EIRENE. As a team member of the fusion group at Aalto University, and ASDEX Upgrade and JET, the candidate is anticipated to participate in experiments, data analyses of existing and future experiments, and to perform edge plasma simulation using the aforementioned codes. Development and implementation of new physics models in these computational tools at the end of the post-doctoral period is strongly desired. The candidate is expected to document and publish research results in peer-reviewed scientific or technical journals and present results at external conferences, seminars and/or technical meetings. The candidate is anticipated to pursue independent, but complementary research interests and interaction with a broad spectrum of scientists both internally and externally are encouraged.

**Requirements**

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

- PhD degree in physics, or in a closely related field by the start of the assignment
- Experience in at least one of these fields: experimental plasma physics and fusion, atomic and molecular physics, computational physics
- Experience in carrying out independent research and working in a team environment to achieve programmatic goals in a timely fashion
- 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 and are given preference:

- Knowledge of edge plasma physics in fusion devices
- Familiarity with edge plasma diagnostic techniques, and atomic and molecular physics
- Knowledge of plasma device operation and interpretation of experimental data
- Experience in programming languages, such as C and Fortran, and data analysis programming languages, such as Python and MATLAB
- Existing expertise in edge plasma codes, e.g., SOLPS and EIRENE
- Experience in collaborating with theorists and plasma modelers

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

**Duration, salary and benefits**

The fixed term contract is initially for two years and can, if mutually agreed, be extended for up to 5 years. The annual workload of research and teaching staff at Aalto University is currently 1612 hours.

Aalto University provides a competitive salary and benefit package, including occupational heathcare.

The primary workplace will be the Otaniemi Campus at Aalto University, and will involve international assignments to research facilities in the UK, Germany, other EUROfusion partners and ITER.

**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 Lotta Maltolahti E-mails: firstname.lastname@aalto.fi.

**Applying**

Please send your application at earliest convenience to the Aalto University recruitment system, by June 24, 2022. To apply for the position, please submit your application including the attachment mentioned below as one single PDF document in English through our online recruitment system by using the link on Aalto University’s web page (“Apply Now”). Please note that Aalto University employees and visitors should apply for the position via the university internal system Workday.

- Letter of motivation (max. one page)
- CV (max. two pages), 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.