

Doctoral candidate in Active Matter Physics  
Aalto University

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Posted Jul. 15, 2021, set to expire Nov. 14, 2021

**Job Title** Doctoral candidate in Active Matter Physics  
**Department** T304 Dept. Applied Physics  
**Institution** Aalto University  
, , Finland

**Date Posted** Jul. 15, 2021

**Application Deadline** Open until filled  
**Position Start Date** Available immediately

**Job Categories** Post-Doc

**Academic Field(s)** Physics - General

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**Job Description**

The Active Matter group at the Department of Applied Physics is now looking for an outstanding

Doctoral candidate

to join our research group to carry out experimental research in the ERC Starting Grant “Interacting with Active Particles” on developing novel magnetic trapping and tweezing techniques for controlling and studying active matter systems from synthetic self-propulsive particles to living micro-organisms. This is a 5-year research project funded by the European Research Council, where you will have a chance to make a long-lasting impact on the science of active matter and magnetic tweezers.

Your role and goals

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The role of the doctoral student is to develop and utilize novel magnetic techniques for controlling and studying active materials. You will work closely together with postdoctoral researchers and doctoral students already involved in different aspects of the same research theme in the group. You will carry out the experiments in the facilities of the hosting research group that include a state-of-the-art optical microscopy and physical property measurement laboratory, a chemistry laboratory and cell culturing facilities. You will prepare samples (both biological and synthetic active materials); design, build and test experimental setups and use them for studying the samples you have prepared using magnetic fields and magnetic traps; and analyze the results and develop simple models to describe the observed phenomena.

### Your experience and ambitions

We are looking for a talented and highly motivated student with a Master's degree in physics. We value excellent communication skills (fluency in written and spoken English); ability to find information independently; excellent problem-solving skills; attention to detail; ability to use the language of physics (models, equations, reasoning) to describe, analyze and model the experimental observations; and excellent self-management skills (organization of your own time, work, data and notes). Previous experience in experimental soft and active matter research is considered as a strong asset.

### What we offer

We offer an exciting and challenging research topic for a talented doctoral student who wants to work at the very frontier of soft and active matter physics. You will work within the multidisciplinary Active Matter research group consisting of ca. 4 postdoctoral researchers and 4 doctoral candidates (physicists, chemists and biologists). The group is led by Prof. Jaakko Timonen with a strong track-record and expertise in magnetic soft matter (see. e.g. [[url=https://science.sciencemag.org/content/341/6143/253](https://science.sciencemag.org/content/341/6143/253)]Science 341, 253-257 (2013), [[url=https://www.nature.com/articles/s41586-018-0250-8](https://www.nature.com/articles/s41586-018-0250-8)]Nature 559, 77-82 (2018), [[url=https://arxiv.org/abs/2009.12563](https://arxiv.org/abs/2009.12563)]arXiv:2009.12563 (2020) and [[url=https://arxiv.org/abs/2009.13945](https://arxiv.org/abs/2009.13945)]arXiv:2009.13945 (2020)). You will be supervised by the group leader and receive advising from one or more talented postdoctoral researchers in the group. You will also have the opportunity to design small research projects for undergraduate students working together with you. This position as a doctoral candidate in a lively multidisciplinary research group is an excellent opportunity and a stepping stone on your career towards scientific independence or towards a research-oriented position outside academia.

The position is initially filled for 2 years, and following a successful midterm progress review, the contract is continued for another 2 years after which the PhD dissertation is expected to be completed. Aalto University follows the salary system of Finnish universities. The starting salary is approx.

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2560€/month, and it will increase with responsibilities and performance over time. The contract includes Aalto University occupational healthcare.

Ready to apply?

To apply for the position, please submit your application including the attachments mentioned below as one single PDF document in English through the 'Apply' link.

- Letter of motivation
- CV including a list of publications
- Degree certificates and academic transcripts
- Contact details of at least two referees (or letters of recommendation, if already available)

We will start evaluating the applications on July 17, 2021. Please apply at your earliest convenience but no later than July 31. The position will be filled as soon as a suitable candidate is identified. For additional information, kindly contact Prof. Jaakko Timonen. Aalto University reserves the right for justified reasons to leave the position open, to extend the application period, reopen the application process, and to consider candidates who have not submitted applications during the application period.

Want to know more about us and your future colleagues? You can watch these videos:

[url=https://www.youtube.com/watch?v=#61;5k\_og\_6zUJQ%22%20]Aalto University - Towards a better world, [url=https://www.youtube.com/watch?v=#61;dUfEGVM-

ZP8&feature=#61;youtu.be%22%20]Aalto People , and

[url=https://www.youtube.com/watch?v=#61;ZK6pDWm1\_CE%22%20]Shaping a Sustainable Future.

### About Finland

Finland is a great place for living with or without family - it is a safe, politically stable and well-organized Nordic society. Finland is consistently ranked high in quality of life and was just listed again as the happiest country in the world: [url=https://worldhappiness.report/news/its-a-three-peat-finland-keeps-top-spot-as-happiest-country-in-world/]https://worldhappiness.report/news/its-a-three-peat-finland-keeps-top-spot-as-happiest-country-in-world/. For more information about living in Finland: [url=https://www.aalto.fi/services/about-finland]https://www.aalto.fi/services/about-finland

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[instagram.com/aaltouniversity](https://www.instagram.com/aaltouniversity)

**Contact Information**

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

**Contact**

Finland