

Post-doctoral Research Position in Computational Fluid Dynamics

Faculty of Science and Engineering
Åbo Akademi University, Turku, Finland

Application deadline: October 21, 2018

The Faculty of Science and Engineering at Åbo Akademi University (ÅAU) Turku, Finland invites applications for a full-time, postdoctoral fellowship on the computational fluid dynamics of nanocellulosic materials. The successful applicant will be working in the *SimNano – Numerical simulation of coating processes for nanocellulosic materials* research project, a co-operation between Laboratory of Paper Coating and Converting at ÅAU and Linné FLOW Science Centre/Mechanical Engineering at KTH Royal Institute of Technology, Stockholm, Sweden. The fellowship, funded by the [Tandem Forest Values program](#), will be placed within the Laboratory of Paper Coating and Converting at ÅAU and will be jointly supervised by Professor Martti Toivakka at ÅAU and Professor Fredrik Lundell at KTH. For details of the research groups, see web pages at www.abo.fi/LPCC and www.flow.kth.se.

The focus of the project is, through use of computational fluid dynamics, develop an understanding of the mechanisms that control the flow of nanocellulosic materials in various industrially relevant situations. The results aim at overcoming issues related to the complex flow behavior that challenge large-scale production of nanocellulose coatings and films. The project will develop numerical simulation-based tools that can be used to solve problems of both fundamental and practical importance. Appropriate material models for various types of nanocellulosic materials are adapted based on relevant rheological characterization, and the simulation results are verified with applicable flow visualization techniques.

Pre-requisite for the position is a PhD or equivalent degree in engineering, computer science, applied mathematics or other relevant field. The degree should generally not be older than four years. To qualify, the applicant should have expertise in numerical simulation, including familiarity of pertinent computational tools, e.g. ANSYS, ABAQUS, OpenFOAM, Flow3D, Elmer, COMSOL Multiphysics or their equivalent. We are looking for highly motivated, self-driven candidates that are able to work independently but also collaborate with research groups at ÅAU & KTH. Effective communication skills in English, both oral and written, are expected.

The appointment will be for two years, starting preferably on December 1, 2018, and at latest on January 1, 2019. During the two-year project, the post-doctoral researcher is expected to spend approximately equal amount of his/her work time at Åbo Akademi University, Turku, Finland and KTH Royal Institute of Technology, Stockholm, Sweden, including a continuous period of at least six months at each institute. The salary for post-doctoral researchers is based on job demand levels 5 – 6 according to the salary system of Finnish universities. In addition, a salary component based on personal work performance is paid.

For further information about the position and applying, please contact professor Martti Toivakka (email: Martti.Toivakka@abo.fi, tel: +358 2 2154852). Applications should be submitted electronically by Sunday, October 21, 2018 at 11:59 p.m. (CET +1) at [ÅAU website](#) (<https://goo.gl/TX1vLb>).