



Fraunhofer-Chalmers Centre for Industrial Mathematics (FCC) conducts applied research based on advanced mathematics and simulation to support efficient product realization and optimize production processes for companies in several branches. Our software platform IPS is daily used by hundreds of engineers at more than 80 leading companies across the world.

We have an open position funded by the Swedish Foundation for Strategic Research for an ambitious and talented

PhD Student - Multi-scale modeling and simulation of paper

About us

FCC's department for computational engineering is performing state-of-the-art applied research and development on numerical methods and algorithms for simulation of multiphase flow, electromagnetics, structural mechanics and Multiphysics. Our vision is to increase the use of advanced simulation in industry and the research is integrated in user-friendly software that offer unique possibilities for virtual product and process development. We are located in modern premises at the Chalmers Science Park, campus Johanneberg, Gothenburg, Sweden.

PhD project

The aim of the project is to develop novel numerical methods and algorithms that can be used for prediction of mechanical properties of paper and paperboard. The strength properties of paper depend on the formation of the fiber network on the micro-scale. A multi-scale approach is therefore necessary. In the project a rigorous mathematical analysis of the problem will be performed, a state-of-the-art multi-scale method will be implemented and validated with experiments on industrial paperboard material.

The student will be employed by the Fraunhofer-Chalmers Center, and enrolled at the research school in applied mathematics at the Department of Mathematical Sciences, Chalmers University of Technology. Professor Axel Målquist will serve as main supervisor. A maximum of 10% teaching is included in the position, and the PhD should be completed within 4,5 years. The PhD project is part of the ongoing Innovative Simulation of Paper (ISOP) project at FCC, which is run in cooperation with Stora Enso and Albany International.

Your profile

You have a Master of Science, or equivalent, and a strong background in mathematics. The developed methods are implemented in software that will be used by industry and good or excellent programming skills are therefore required. You will work together with the ISOP team of researchers and engineers. You are a team player with strong interest in industrial applications, but also expected to work autonomously, develop your own ideas and communicate results to the scientific community.

Interested?

Welcome to submit your electronic application including cover letter, CV, course grades and other relevant work such as master thesis, no later than **March 17** to: phd-student@fcc.chalmers.se

We aim for a project start June 1, 2019, but you could still apply if you finalize your master thesis during the spring term. For questions about the position, please contact head of department Fredrik Edelvik, fredrik.edelvik@fcc.chalmers.se, +46 730 794422.