

The Interaction of Bacteria and Cilia in Viscoelastic Media

Under the [NWO Start-Up](#) funding scheme, I seek to fill a 4-year PhD position in my group [Soft Matter, Hydrodynamics, and Biophysics](#) for the modeling of the interaction between cilia and bacteria in mucous environments. The intended starting date is mid 2019 (is negotiable). The salary will match the Dutch University pay scale.

The aim of the project is to analyze the interaction between bacteria and cilia in viscoelastic media using simple physical models and work towards the simulation of more bio-realistic rheological responses. The underlying fluid dynamics will be tackled using a suitable hydrodynamic solver, likely the lattice-Boltzmann method, which you will help develop further. Connection to experiments is made through collaboration with the University Medical Center Utrecht.

A successful applicant will be hosted by the [Institute for Theoretical Physics](#) at [Utrecht University](#) and embedded within the [Dutch Research School of Theoretical Physics](#) and partake in their activities. They may also benefit from the connections to the [Soft Matter Group](#) at Utrecht University.

A Master's degree in theoretical or computational physics (or a related field) is required with a strong background in statistical physics and hydrodynamics. Programming experience is considered highly beneficial.

Candidates are encouraged to send their applications electronically as a single PDF document (including a detailed CV, list of publications, copies of certificates, letter of motivation, and research interests) to [Dr. Joost de Graaf](#) using the e-mail title "*Application for PhD Position in Viscoelastic Hydrodynamics*".