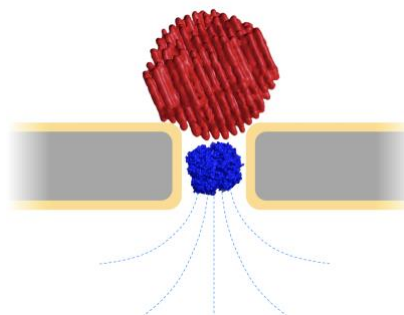


Postdoctoral researcher in biophysics on single-protein sensing using the NEOtrap

We are looking for a highly skilled and motivated **postdoc** in interdisciplinary biophysics to advance our newly developed single-molecule technique for protein detection: the NEOtrap = Nanopore Electro-Osmotic trap.

Research project

The NEOtrap is formed by a DNA-origami structure docked onto a nanopore to (i) form a nanoscale cavity, and (ii) induce an electro-osmotic trapping potential. This allows us to sense the behaviour of a single protein over time, similar to smFRET or optical/magnetic tweezers. The big advantage is however that the NEOtrap works label-free using native proteins, is not limited by photo-bleaching, and does not rely on mechanical unfolding. The NEOtrap is further unique, in that it covers up to 8 orders in time (microseconds to hours), which is ideal to detect the broad range dynamics observed in proteins. The NEOtrap has already proven to distinguish not only proteins of different molecular weight, but even nucleotide-dependent conformations of the same protein, which demonstrates excellent sensitivity thus opening the way for many exciting next steps including electrical detection of protein dynamics, enzymatic reactions, protein fingerprinting, electro-optical combinations etc.



Candidate profile

For this innovative, interdisciplinary, and fully funded project, we are immediately looking for an enthusiastic postdoctoral researcher with a strong background in one or several of the following fields: experience in single-molecule experiments, protein biophysics, nanofluidics/nanopore detection, advanced data analysis and pattern recognition. We further expect the candidate to have an independent, well-organized and reliable work style, to be communicative and interested in the broader field of single-molecule protein science, thereby contributing to our open and interactive lab culture. The position is shared between the labs of Cees Dekker at TU Delft, NL, www.ceesdekkerlab.nl and Sonja Schmid at WUR, NL, www.NanoDynamicsLab.nl. It goes without saying that we are open to friendly and driven humans of all kind.

Please send your application – including motivation letter, CV, and email addresses of 3 references – before January 17th, 2021, to c.dekker@tudelft.nl and sonja.schmid@wur.nl.