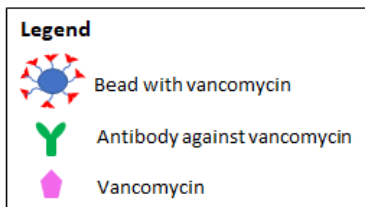
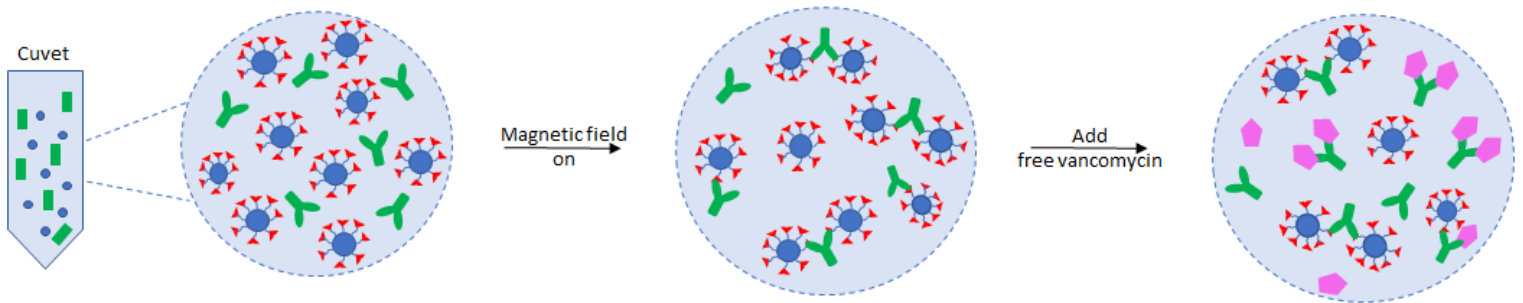


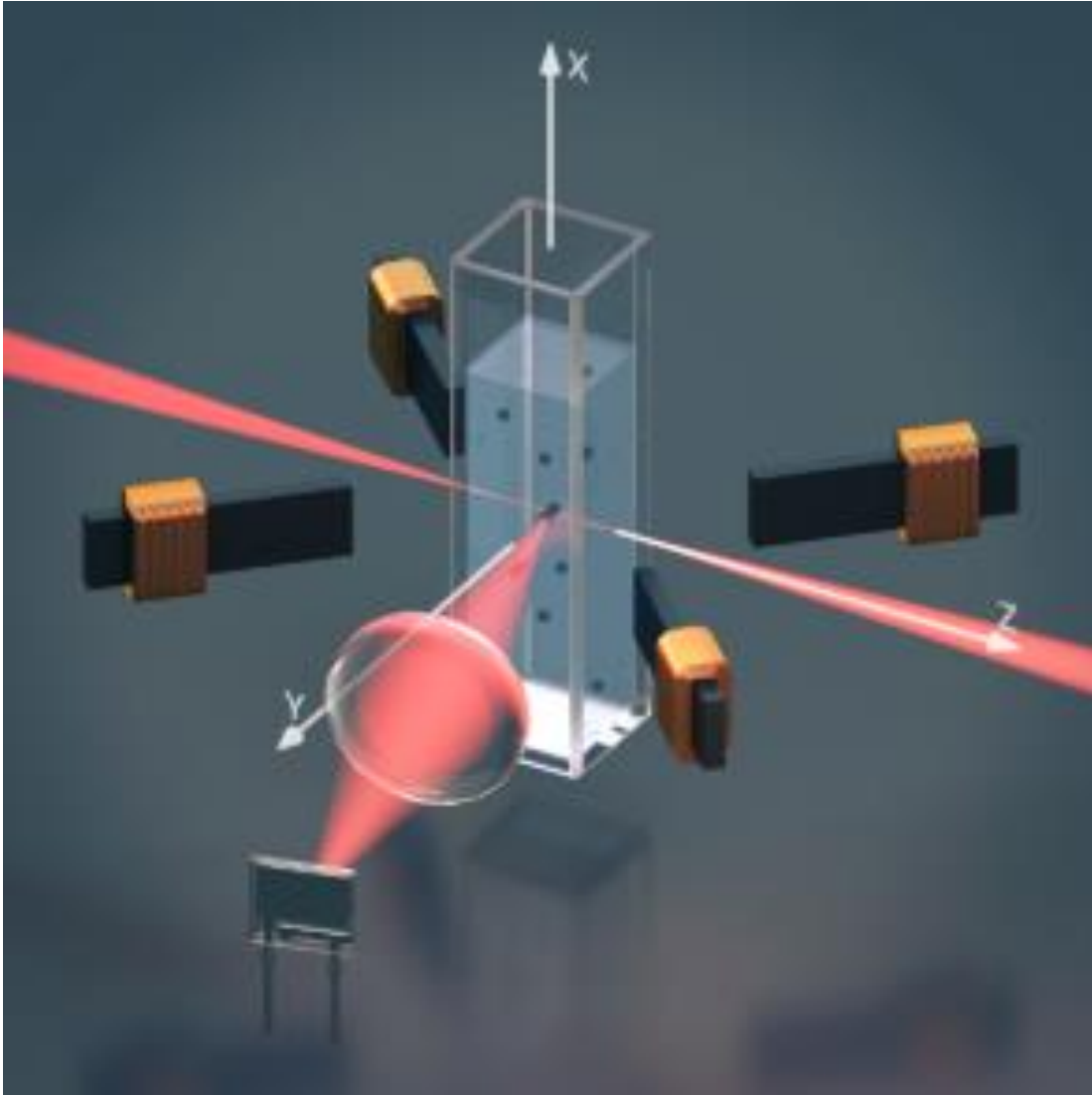
3D model of the biosensor

We performed extensive 3D modeling of the housing and the place of components before making the final 3D print of the housing, resulting in an optimized design of only 24 x 15 x 6 cm in xyz dimensions.



Chemical principle of the biosensor

Our paramagnetic beads are coated with vancomycin, which means a molecule such as the antibody anti-vancomycin can create bridges between beads to form clusters (connected beads). Free vancomycin in the blood sample then competes for the anti-vancomycin and decreases the number of clusters.



Optomagnetic cluster setup

A laser illuminates our cuvette filled with paramagnetic beads that can react to the magnetic coils surrounding the cuvette. Some of the light scatters off the beads and is registered at a 90 degree angle with a photodetector. The amount of light scattering and concentration vancomycin are correlated.