1126-76-229 **Longhua Zhao*** (lxz315@case.edu), Cleveland, OH 44106, and **Yang Ding**, Beijing, Peoples Rep of China. *Fluid dynamics for micro-fluidic tweezers in the Stokes regime.* Preliminary report.

Nanowire fluidic tweezers have been developed to capture and manipulate micro objects. The fluidic trapping force and the fluid field are important to achieve accurate control, but the mechanism has not been fully understood yet. Utilizing singularity method, we construct the analytical velocity field to flows induced by a spheroid nanowire tumbling in the Stokes regime. To further explore the trapping, we analyze the trajectories of rigid or deformable microspheres near the tumbling nanowire with regularized Stokeslet method. The fluid structure, the trapping phenomenon are illustrated with the trajectories of fluid tracer and the microspheres. Given the geometry, the tumbling rate is crucial to the volume of trapping zone. The preliminary results about trapping mechanism trapping are presented. (Received January 14, 2017)