

## **Complex motion in acoustophoresis microchannels**

(Oral)

*Per Augustsson, Department of Measurement Technology and Industrial Electrical Engineering, Lund University, Sweden*

The term acoustophoresis refers to a system designed to transfer suspended cells or microbeads (particles) by means of acoustic radiation forces in a continuous flow microchannel. Most often, the intention is to deflect the particles paths relative to the suspending fluid, by imposing a force that is directed perpendicular to the microchannel flow. The motive for setting up this type of systems can be to enrich particles, to transfer particles from one suspending fluid to another, or to separate particles of different types based on their intrinsic acoustofluidic properties.

The minimal experimental setting for these phenomena is the following: a piezoceramic actuator, a silicon/glass microchannel, and a suspension of cells or microbeads. The talk will cover the motion of cells and microbeads in suspension when exposed to ultrasonic resonances. Important features of this technique will be explained by observing phenomena and by relating the observations to theory.