SELECTIVE PARTICLE SEPARATION USING STATIC OR DYNAMIC ACOUSTIC WAVE FIELDS

Background

Many particle separation techniques exist, like centrifugation and filtration. Another relatively new technique is the separation of particles using acoustic waves. Acoustic waves are capable to selectively separate particles based on their size, density and/or compressibility. Currently, selective acoustic separation is mainly achieved in micrometer-sized devices with static standing acoustic wave fields. Dynamic acoustic fields offer a promising alternative to be used in larger scale devices. The goal of this project is to investigate selective separation possibilities of micrometer-size particles in a centimeter-scale acoustic separator utilizing static or dynamic acoustic fields. Figure 1 illustrates a recent prototype developed in Wetsus.

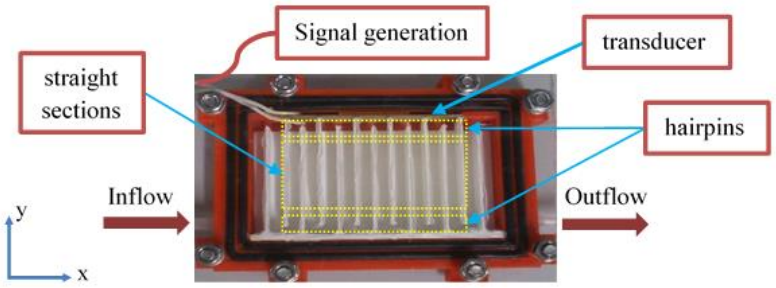

Figure 1 – The novel serpentine separator prototype

Your profile	**Our profile**
The ideal candidate has a background in mechanical/environmental/chemical/food engineering or a similar field, and looking for an internship or BSc/MSc thesis. Having experience with mathematics, acoustics and relevant lab experience is an advantage.	Wetsus, European centre of excellence for sustainable water technology is a facilitating intermediary for trendsetting know-how development. Wetsus' scientific research program is defined by the private and public water sector and conducted by leading universities.
Your tasks - Design and computer simulations for a new acoustic separator or improvements on an existing separator. - Carrying out experiments, analyzing and reporting the results. - Experimenting with different scenarios for selective particle separation.	**Our offer** - Working in an international and multidisciplinary environment. - Monthly allowance for living expenses of €350/month. - Opportunity to develop your analytical and experimental skills.

Duration and Logistics

The project will be carried out in Wetsus, Leeuwarden. Duration of the project is foreseen as minimum 3 months. Starting date is flexible.

Applications

The interested candidates should contact Hakan Kandemir (hakan.kandemir@wetsus.nl). Please provide your CV, your transcript and your motivation letter (A4).