

Project description

In the animal industry, artificial insemination is a well-established method for growing animal livestock. Naturally speaking, the ratio of male/female offspring is around 50%. However, for some industries one specific sex is desired, e.g. female offspring for the milk industry. Performing artificial insemination with sex-sorted semen (sperm cells with only X or Y chromosomes) can have a big economic benefit compared to insemination with normal semen.

The goal of this research is to develop a microfluidic system, which is able to electrically detect whether a spermatozoon contains a X- or Y-chromosome and to subsequently sort them into two fractions. Important potential benefits of this technique compared to the existing method of sorting by fluorescent-activated cell sorting (FACS), are an increase in sorting efficiency and a decrease in inflicted cell damage.

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