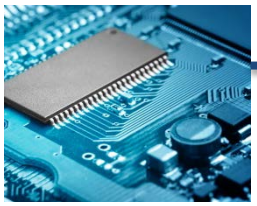

Acoustweezer

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Technology Transfer Office

Acoustical tweezers for contactless and selective manipulation of micro- and nanoscopic objects

Keywords

- Particle trapping
- Micro Particle Handling
- Micro-tweezer
- Micro-acoustic Gripper

Intellectual Property

PCT Patent Application: PCT/EP2016/055611

Development Status

Prototype of acoustical tweezers produced in the laboratory

Partnership

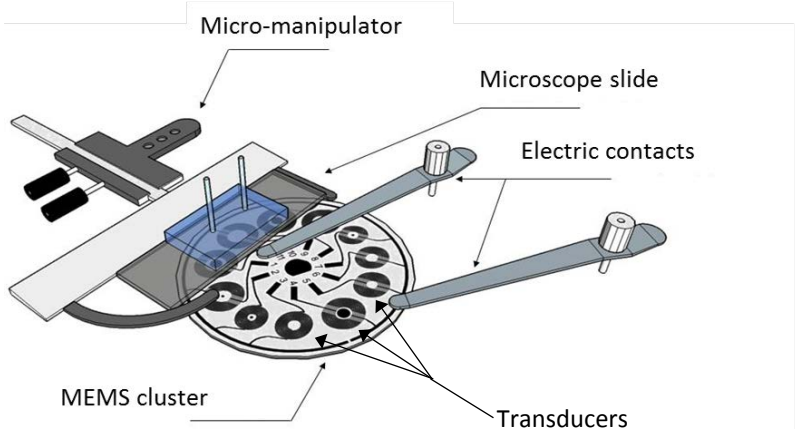
Licensing and/or partnership

Technology

This MicroElectroMechanical System (MEMS) allows the **remote manipulation of particles, cells and droplets** lying in a liquid sample with a **high selectivity** (one particle can be selected and moved independently of its neighbors).

This technology relies on the use of a specific kind of surface acoustic waves called swirling surface acoustic waves, which are synthesized at the surface of piezoelectric material with Interdigitated transducers.

These waves once transmitted to a liquid sample create a localized acoustical trap.



Benefits

- The manipulation is **contactless and non-invasive** and do not interfere with biological process thus limiting alteration of the particle, cell, …
- The MEMS is **highly compact** and can be easily integrated in existing systems (microscope, lens, lab on a chip)
- The system can manipulate particles ranging from **1 mm to 100 nanometers**
- The device **production is simple, cheap** and compatible with current equipments.
- **No pre-marking** is required for the manipulation
- The MEMS is printed on a transparent material, enabling **simultaneous manipulation and visualization**.
- **3D manipulation** is possible
- The **trapping process is compatible with** a large range of materials including **glass and PMMA** (e.g Petri dishes or microchannels…)

Applications

- Microscopy
- Labs on chips
- MEMS assembly
- Cellular biology
- Cell printing

contact

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