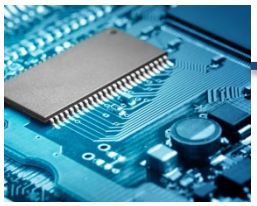


ACOUSTWEEZER - HEALTH

SATT NORD
Technology Transfer Office

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

Keywords

- Micromanipulation
- Microtweezer
- Microgripper
- Particletrapping

Intellectual Property

3 Patent families:
Family n°1:
WO2017157426
Familyn°2:
WO201981521
Familyn°3 :
WO2021122479

Development Status

Prototype of acoustical tweezers produced in the laboratory

Partnership

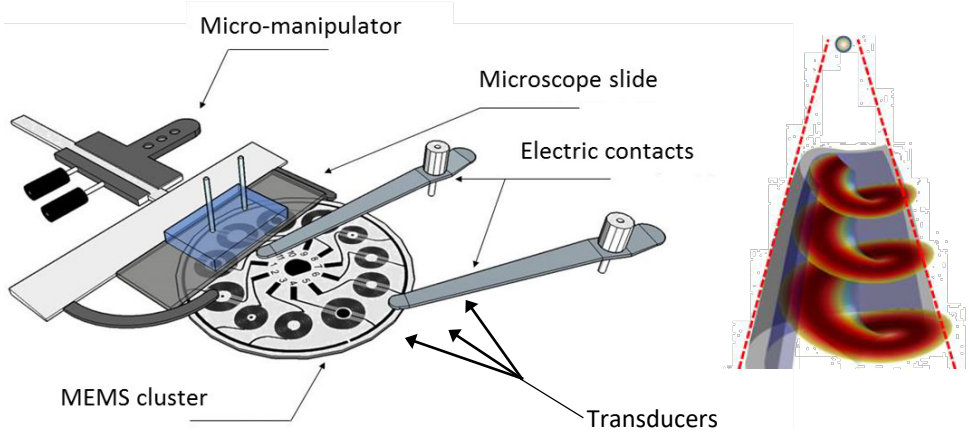
Licensing and/or partnership

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 in dependently of its neighbors).

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

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



Benefits

- 3D Trapping and manipulation
- 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, labonachip)
- 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**.
- The **trapping process is compatible with** a large range of materials including **glass and PMMA**(e.gPetridishesormicrochannels…)

Applications

- Cellularbiology
- Microscopy
- Labsonchips
- MEMSassembly
- Cellprinting

contact

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Reference Acoustweezer– 01/2023 – ENG V2.0 sante