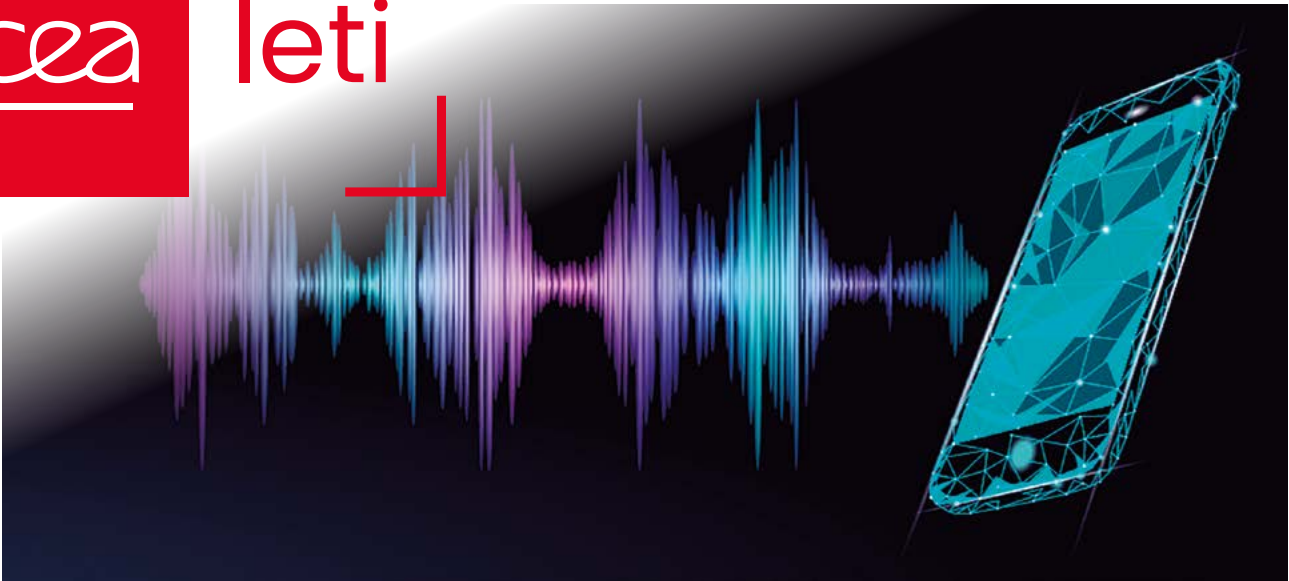




cea

leti



MEMS-based loudspeakers

High-end loudspeakers
for smartphones & small appliances

What is a MEMS-based loudspeaker?

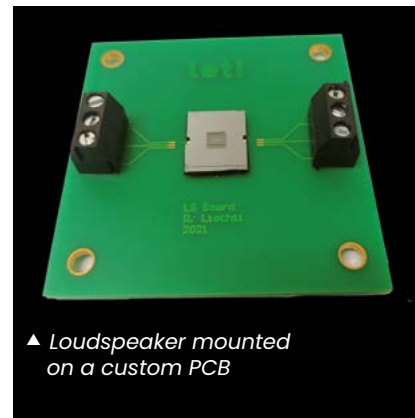
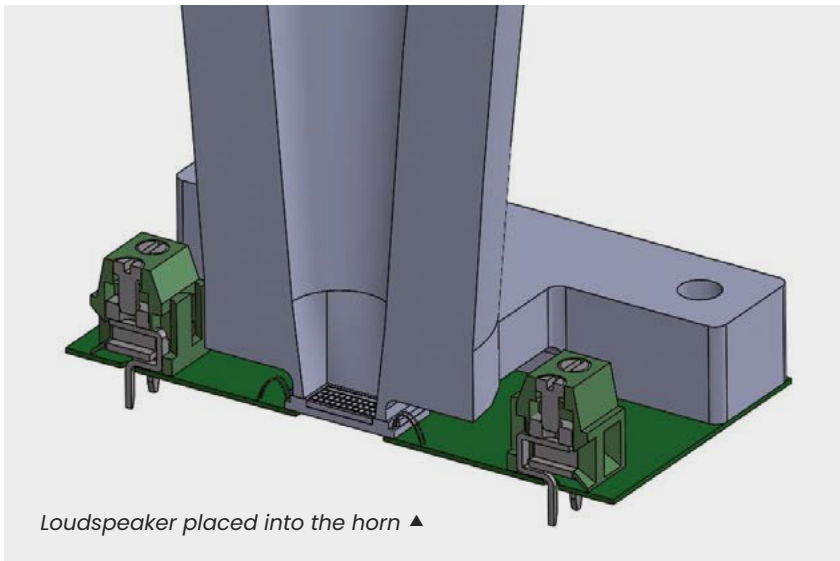
The best sound quality still comes from bulky high-end loudspeakers. CEA-Leti is going a step further into making loudspeakers compatible with micro-fabrication processes with a new piezoelectric micro-loudspeaker using almost exclusively silicon. CEA-Leti small loudspeaker achieves similar performance as larger loudspeakers using conventional manufacturing techniques. It is fitted into a 3D printed horn that mechanically improves performances.

Applications

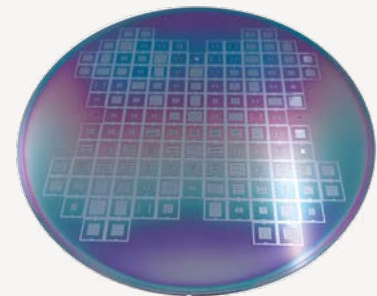
- Smartphones
- Smartwatches
- Earphones
- Headphones
- Connected IoT & Hardware

What's new?

CEA-Leti researchers unveil an innovative manufacturing process using two types of 200 mm silicon wafers assembled with a polymeric glue. This technique helps separate the electro-mechanical transduction from the mechano-acoustical transduction. This innovation translates into greater performances for small-sized loudspeakers, with a sound pressure of 80 dB SPL at 10 cm, starting at a frequency below 1 kHz.



Loudspeakers Wafer Design ▼



What's next?

CEA-Leti researchers will tune this loudspeaker using a system approach to improve performances and make sure it fits well into current applications, such as smartphones and other IoT devices. Additional digital signal processing, acoustical tuning and packaging techniques will be investigated.

Interested in this technology?

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