

CONTACT:

Investors - [Dr. Jan Blochwitz-Nimoth](#), +49 351 501 9590

Press - [Sara Günnewig](#)
+49 178 854 9636

Key data:

Founded: 2019
Based in: Dresden (GER)
#Employees: 7 (Feb 2021)
Financing: Venture Capital
www.arioso-systems.com

Highlights:

- The only MEMS speakers made from 100 % silicon
- Uniquely small, energy-efficient and scalable
- Exclusive Fraunhofer licence
- Cost leadership potential

Investors:

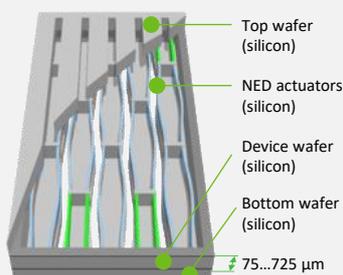
HTGF, Brandenburg Kapital, TGFS Sachsen, Business Angels

Managing Directors:

Dr. Hermann Schenk
Dr. Jan Blochwitz-Nimoth



Composition of the Arioso μ Speaker



Arioso Systems: DEEP TECH and START-UP Expertise

- Team of experienced engineers and founders in deep tech, incl. the technology's inventor.
- Arioso Systems develops and markets microspeakers made from 100 % silicon (MEMS chips) for in-ear devices. They are ten times smaller than conventional speakers, more energy-efficient – and easily scalable.
- Target clients include the large OEMs (Apple, Samsung & Co.) and Internet brands as well as manufacturers of headphones and hearing aids.

Arioso μ Speaker enables MEGA TRENDS „Voice“ and „Hearables“

Trend „Internet of Voice“ (IoV)

In the future, we will type/read less and speak/listen more. Speech assistants are soon going to dominate online searches.

Trend „Hearables“/„True wireless“

In-ear devices are optimal for IoV (close to mouth, hands stay free). They are growing by 15-20 % per year and becoming Hearables with AI functions.

- Arioso μ Speakers make room for new intelligent functions that require more computing and thus space and power. They are very small (~10 mm² / 0.4 sq in) and highly energy-efficient (power consumption < 3mW). Traditional speakers are too large.
- Size of microspeaker market 2024 (see Yole report 2019): 11 bn USD – Arioso Systems aims at a substantial market share in micro speakers for true wireless in-ear devices.

A COMPLETE SPEAKER WITHIN ONE SILICON CHIP

- **Unique:** The sound is produced inside the silicon chip. There are no parts like a membrane. That frees up space – and eliminates additional assembly steps.
- A multitude of thin movable beams inside the chip are actuated (NED technology) to create a sound pressure level of up to 120 dB with highest audio quality.
- The technology – patented by Fraunhofer and exclusively licensed to Arioso – is constantly being refined to meet market requirements. Its feasibility has been proven by prototypes.
- **Product range** includes: MEMS speakers and respective driving chips and packages; each in standard and customized designs.

COST LEADERSHIP POTENTIAL (CMOS and 100 % Silicon)

- Only Arioso μ Speaker are made from 100% silicon and use widespread CMOS production standards (fabless business model). Therefore, they are easily scalable.
 - Other MEMS speakers employ piezo materials (contain lead), are not CMOS compatible (=require special production infrastructure) and have a membrane. These aspects tend to increase their size and power drain, and complicate production.
- ➔ The patented NED technology makes Arioso μ Speakers uniquely small, energy-efficient and scalable for the mass market.