

Press release

Invention for continuous blood pressure monitoring wins CSEM's 2023 Inventor Award

- **Award granted to 4 scientists from the Swiss Center for Technological Innovation**
- **Innovation for continuous blood pressure monitoring has been transferred to industry for commercialization.**
- **One in three people worldwide is affected by high blood pressure, often unknowingly, resulting in high healthcare costs.**

Neuchatel, 8 February 2023 – For the second year in a row, CSEM is granting its Inventor Award to a patented technological innovation with a high impact on our business, the industry and society in general. This year, the award has been granted to four researchers who have developed a continuous optical blood pressure measurement system. The concept is the cornerstone of a technological solution that enables non-invasive blood pressure monitoring for millions of patients worldwide.

The patent of the four scientists Martin Proença, Josep Solà, Mathieu Lemay, and Christophe Verjus "Method, apparatus and computer program for determining a blood pressure value" is one of CSEM's major innovations. Filed in 2015, it covers a non-invasive optical technique that detects pressure and volume variations in blood vessels.

"Our Inventor Award highlights our collaborators' innovative and disruptive ideas," says Alexandre Pauchard, CEO of CSEM. "The invention and the work of this year's award-winning team are particularly interesting, as they have led to very concrete applications by our customers and have helped create around 85 high value-added industrial jobs. Most importantly, by addressing hypertension, one of the most prevalent cardiovascular diseases today, the technology developed by our colleagues is having a positive societal impact, with the potential to sustainably improve the health of millions of people worldwide."

A technological brick to build many solutions

The CSEM's 2023 Inventor Award jury was particularly sensitive to the wide range of possible developments based on this technology. Called oBPM® for optical Blood Pressure Monitoring, it represents a great success for CSEM in terms of technology transfer to industry, with its first commercialized application, the blood pressure monitoring of the [Aktiia](#) spin-off. Companies active in the world of connected medical devices value the possibility of continuous monitoring, its user-friendliness, comfort, and low cost, which make it possible to envisage many specific situations for product or service to be used. This is true of the blood pressure monitoring via smartphone proposed by [Biospectral](#) and the blood pressure monitoring system for people with spinal cord injuries developed by [ONWARD Medical](#).

Jens Krauss, Vice President of the Systems Business Unit at CSEM, says: “For more than 20 years, our engineers and experts have been working on the measurement of vital parameters and wearable medical technologies. We have filed numerous key patents and developed an expertise that places us among the world leaders in the field of wearable medical devices, which attracts companies from Switzerland and abroad.”

Hypertension – a silent and deadly disease

Asymptomatic, high blood pressure affects one in three people worldwide and causes millions of cardiovascular diseases and deaths every year. In most cases, the person affected is unaware of his or her disease, and therefore does not treat it early enough, hence running the risk of causing serious cardiovascular diseases such as stroke or heart attack. A first step in hypertension treatment is therefore to know the disease and monitor blood pressure continuously and on an out-patient basis. Conventional blood pressure monitoring via an arm cuff can be cumbersome and stressful, as it requires patients to visit an office, pharmacy, or hospital on a regular basis, making continuous monitoring difficult.

About the winners:

- Mathieu Lemay, Head of Signal Processing, at CSEM since 2011, *1978 in Québec (CAN).
- Martin Proença, Biomedical Expert, at CSEM since 2011, *1986 in Fribourg (CH).
- Christophe Verjus, Senior Project Manager & Business Development, at CSEM since 2000, *1972 in Athis-Mons (FR).
- Josep Solà, employed at CSEM from 2004 to 2018 as an engineer and then as a Biomedical R&D manager, now CTO at Aktiia which he co-founded in 2018, *1980 in Santa Coloma de Farners (ESP).

CSEM’s Inventor Award

The CSEM’s Inventor Award is an annual CHF 5,000.00 prize, awarded to one or more CSEM inventors for the creation of a patent with a strong impact on the company, the industry and society in general. It is intended to stimulate staff members’ creativity and inventiveness. These award-winning discoveries will strengthen the Swiss Center for Technological Innovation’s technological offer to clients’ and partners’ benefit.

Additional information

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CSEM –Facing the challenges of our time

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