

Press release

The first CSEM Inventor Award recognizes an outstanding invention coming out of CSEM's labs

CSEM Inventor Award goes to an invention that can double the battery life of Bluetooth earbuds

Neuchâtel, 08 February 2022 – The first CSEM Inventor Award has been given to Dr. Franz Xaver Pengg for a remarkable invention that he developed and patented at CSEM. His technology forms a key component of icyTRX – an ultra-low-power transceiver that can be integrated into Bluetooth chips, enabling greater miniaturization and a longer battery life for portable devices such as Bluetooth earbuds and hearing aids.

Dr. Pengg's patent, "A two stage single-ended input differential output reuse low noise amplifier," which he filed in 2013, covers a technology that's behind a breakthrough CSEM innovation: icyTRX. This circuit allows engineers to design Bluetooth devices that are not only smaller but also require substantially less power, meaning their batteries can last a lot longer. icyTRX has been licensed to a number of leading chip vendors including EM Microelectronics, onsemi and Oticon. It's one of CSEM's biggest commercial successes and has been integrated into millions of chips fabricated by CSEM partner companies.

The judges for the CSEM Inventor Award saw Dr. Pengg as the obvious choice for this prize, which will henceforth be awarded annually. "The idea behind the CSEM Inventor Award is to stimulate our engineers' creativity and pioneering spirit," says Alexandre Pauchard, CEO of CSEM. "Their original ideas will be key to enhancing the range of technologies we offer to businesses. Through his hard work and ingenuity, Dr. Pengg has helped develop a system that's had a major impact for both CSEM and our customers. It also brings benefits to society as a whole because it reduces the power consumption of portable devices."

A global leader in ultra-low-power circuits

With icyTRX, manufacturers can incorporate Bluetooth Low Energy technology into their own circuits and equip the next generation of connected objects. icyTRX is also now available in a format supporting both Bluetooth Low Energy and Bluetooth Classic, meaning it can support the latest portable audio products. CSEM's system can double the battery life of earbuds and hearing aids without compromising on the quality of audio transmission.

"icyTRX is the result of many years of R&D by an entire CSEM research group and has led to the filing of several important patents, including Dr. Pengg's," says Alain-Serge Porret, Vice President, Integrated and Wireless Systems at CSEM. "Thanks to the know-how our engineers have built up in ultra-low-power circuits over the years, our center is recognized as a global leader in this field and attracts companies from Switzerland and abroad."

The CSEM Inventor Award, along with CHF 5,000 in prize money, will be handed out annually. “We’re already looking forward to honoring the next innovative, disruptive technologies that our colleagues here at CSEM will come up with,” says Pauchard.

CSEM Inventor Award

The CSEM Inventor Award and CHF 5,000 in prize money will be given every year to one or more CSEM employees who develop a patented invention that brings major benefits to CSEM, businesses and society in general. The goal is to stimulate the creativity and ingenuity of CSEM engineers.

For more information

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About CSEM

CSEM—technologies that make the difference.

CSEM is a Swiss research and development center active in the fields of precision microfabrication, digitalization, and renewable energy. CSEM builds up the ties between industry and academia. It supports companies as a hub of ingenuity, a center of technological excellence and innovation, and accelerator of the digital transformation.

Further information is available at www.csem.ch.

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