

Wireless EEG headset for emergency room and intensive care unit patients

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3D graphic of EEG headset from Nihon Kohden. Credit: Nihon Kohden

The world-leading nanoelectronics research center imec and Holst Centre (set up by imec and TNO) announced that they have collaborated with Nihon Kohden, a Japanese manufacturer, developer and distributor of medical electronic equipment, on the development of a wireless electroencephalogram (EEG) monitoring device for clinical applications.

Imec partnered with Holst Centre and Nihon Kohden to [design](#) and develop a customized wireless EEG [headset](#) to monitor Emergency Room (ER) and Intensive Care Unit (ICU) patients. A systematic approach was used to tailor electronics design, circuit design and mechanical design to the needs of the ER and ICU environment. The resulting prototype was then used by Nihon Kohden to further develop a wireless EEG monitoring solution for ER and ICU patients, which was launched earlier this month in Japan. The prototype was based on imec's proprietary EEG solution and featured 8 channels of EEG with disposable electrodes that optimize speed and ease of setup. Additionally, the prototype headset had to meet the performance requirements of the Japanese standard for clinical EEG monitoring.

"In this collaboration with Nihon Kohden, we leveraged our proprietary EEG monitoring headset and our extensive expertise in high quality EEG sensing with active amplifier, and ergonomic design to realize a customized prototype EEG headset that met the requirements of Nihon Kohden's specific solution," stated Chris Van Hoof, program director wearables at imec. "We are excited with this achievement which demonstrates the profound value of our research and development in supporting our partners with their product innovation. This is an excellent example of how imec aims to advance healthcare with more sustainable, patient-centric solutions."

Provided by IMEC

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