

"From oral AI hearing aid to VR treadmill" GIST to participate in 2025 Korea Science and Technology Festival

- AI-based practical and experiential technologies such as AI hearing aids that are inserted into the mouth in the form of prosthetics, a system that controls high-frequency noise in dentistry, and a 360-degree treadmill that allows you to feel as if you are actually walking on the ground will be showcased... until the 20th in Daejeon



▲ GIST is exhibiting and operating a booth at the 'Curiosity Research Center' space of the '2025 Korea Science and Technology Festival' with Professor Eunsung Song's 'Oral Hearing Aid and Hearing Restoration Technology' and 'Noise Control System for Dental Handpieces' and Professor Jung Won Yoon's 'Ultra-thin Omnidirectional Treadmill' from the AI Graduate School.

The Gwangju Institute of Science and Technology (GIST, President Kichul Lim) announced that it will participate in the '2025 Korea Science and Technology Festival' held in downtown Daejeon from April 16 to 20 and showcase cutting-edge technologies based on artificial intelligence (AI).

This festival is the largest science and culture event in Korea that combines the 'Korea Science Festival' centered on performances and experiences, the 'Korea Science and Technology Fair' centered on R&D research results exhibitions, and the 'Daejeon Science Festival' that combines the World Science Culture Forum and cultural performances.

GIST will set up a booth in the exhibition space called the ‘Curiosity Lab’ and showcase GIST’s unique research results that can stimulate visitors’ curiosity and increase their interest in science and technology in line with the slogan of the 2025 Korea Science and Technology Festival, ‘Awaken Curiosity, the Engine of Science and Technology.’

In particular, based on the experience of participating in the Korea Science and Technology Fair every year, the exhibition was organized around technologies that visitors can experience firsthand, focusing on expanding the contact point between science and technology and the public.

First, in the ‘left’ booth, the ‘Oral Hearing Aid and Hearing Restoration Technology’ and ‘Noise Control System for Dental Handpieces’ from Professor Eunsung Song’s lab in the AI Graduate School will be exhibited.

The ‘Oral Hearing Aid and Hearing Restoration Technology’ is a new concept hearing assistance device that is inserted into the mouth and is not visible from the outside, and is characterized by combining the functions of a prosthesis and a hearing aid.

The ‘Noise Control System for Dental Handpieces’ improves the quality of voice and music listening by applying AI-based hearing restoration technology, and can be used during dental treatment, making it highly practical. In particular, psychoacoustic-based noise control technology is also applied, effectively reducing patient stress even in dental environments that are sensitive to high-frequency noise. Visitors can experience this technology by lying down on the dental unit chair on site.



▲ (Left booth) A visitor is experiencing the ‘Dental Handpiece Noise Control System’ exhibition booth developed by the ‘Hearing and Music Cognition Lab (Professor Eunsung Song)’.

At the ‘Right’ booth, you can experience the ‘Ultra-thin Omnidirectional Treadmill’* developed by Professor Jung Won Yoon’s lab in the AI Graduate School. This device is a personal mobility platform that provides

users with an immersive experience as if they were actually walking and moving in a virtual reality (VR) environment, even in a limited space.

This treadmill, reminiscent of the VR walking device featured in the SF film ‘Ready Player One’, was developed with a design that took into consideration not only the immersion but also the safety of the user, and provides visitors with a unique VR experience.

* Additional technology development of the ‘ultra-thin omnidirectional treadmill’ was carried out through the IP Star Scientist Support Research Project (RS-2024-00424892) of the University Technology Management Promotion Project of the Ministry of Science and ICT.



▲ (Right booth) A visitor is experiencing the ‘ultra-thin omnidirectional treadmill’ exhibition booth created by the ‘Intelligent Medical Robotics Laboratory (Professor Jung Won Yoon)’.

GIST President Kichul Lim said, “As the slogan of this festival suggests, I hope that GIST’s research achievements will stimulate the public’s curiosity and lead to interest in science and technology,” and added, “We will continue to create changes that the public can feel through research closely related to real life, and fulfill our social mission as a research-oriented university leading future science and technology.”

Meanwhile, this festival is co-hosted by the Ministry of Science and ICT and Daejeon Metropolitan City, and co-hosted by the Korea Foundation for the Advancement of Science and Creativity, the National Research Foundation of Korea, Daejeon Tourism Organization, and the Science Culture Private Council. The event will be held at Daejeon Expo Citizen’s Plaza, Expo Science Park, and Daejeon Convention Center with various programs.