GIST holds Cryo-EM Introduction Symposium... Leaping forward as a global bio research hub

- 4.18 (Fri)·21 (Mon)·22 (Tue) 3 days, Celebrating the introduction of GAIA 300kV (kilovolt) high-resolution cryogenic transmission electron microscope (Cryo-EM) and sharing the latest research trends and application cases

- President Kichul Lim, “The introduction of Cryo-EM equipment is a significant turning point that goes beyond simple equipment expansion and advances GIST’s advanced research infrastructure to the next level.”

- GAIA Director Tae-Young Kim, “We will utilize Cryo-EM equipment to enhance the joint use of GIST’s advanced bio-large-scale research equipment.”

▲ GIST Advanced Institute of Instrumental Analysis is holding a Cryo-EM launching symposium and attendees are taking a commemorative photo. (From left) Thermo Fisher Scientific Vice President Woojong Yoon, GIST School of Life Sciences Professor Mi-Sun Jin, GAIA Director Tae-Young Kim, President Kichul Lim, School of Life Sciences Professor Soo Hyun Eom, Vice President for R&DB Sungho Jeong, and Vice President for Public Affairs Yonghwa Chung

The Gwangju Institute of Science and Technology (GIST, President Kichul Lim) announced on Wednesday, the 23rd, that it successfully concluded a symposium commemorating the introduction of the cutting-edge molecular structure analysis equipment, cryogenic transmission electron microscope (Cryo-EM).

This symposium was organized to commemorate the introduction of the 300kV (kilovolt) high-resolution Cryo-EM newly installed at the Advanced Institute of Instrumental Analysis (GAIA) in January of this year, and to share the latest research trends and application cases.

* Cryo-EM: A technology that rapidly freezes biomolecules such as proteins, viruses, and cells to an extremely low temperature of -196°C and observes them in their physiological state, allowing for precise analysis of the 3D structure of biomolecules and new materials at the atomic level. It is leading innovative developments in research fields such as life sciences, medicine, and new drug development.

The event took place over three days, April 18 (Friday), 21 (Monday), and 22 (Tuesday), and consisted of seminars and workshops covering everything from basic knowledge related to Cryo-EM to actual equipment demonstrations.

The first day of the event held at Oryong Hall was attended by GIST President Kichul Lim, Vice President for R&DB Sungho Jeong, Vice President for Public Affairs Yonghwa Chung, Director of GAIA Tae-Young Kim, Professors Soo Hyun Eom and Mi-Sun Jin of the School of Life Sciences, and around 100 researchers from related fields, including Director of the Cell Membrane Protein Research Institute Ji-oh Lee, Vice President of Thermo Fisher Scientific Woojong Yoon, Professor Jin-young Kang of KAIST, and Professor Se-cheol Oh of Pusan National University.

In his welcoming speech, President Kichul Lim emphasized, “The introduction of Cryo-EM is a significant turning point that will advance GIST’s cutting-edge research infrastructure to the next level,” and “It will inject new vitality into convergence research in various academic fields, including life sciences, new drug development, and materials science.”

He also added, “We expect that researchers will be able to use this equipment to gain unprecedented scientific insights and greatly contribute to GIST’s emergence as a global bio research hub.”

▲ President Kichul Lim giving a welcoming speech at the Cryo-EM launching symposium.

GAIA Director Tae-Young Kim expressed his ambition, saying, “Through this symposium, we will actively link GIST’s world-class research infrastructure and international cooperation network with Cryo-EM-based research,” and “We will further enhance the joint use system of large-scale research equipment through the CeLINE consortium in the future.”

* CeLINE Consortium: It is a research cooperative body that supports leading research and development based on cutting-edge large-scale research equipment and supports domestic researchers to jointly use cutting-edge equipment such as nuclear magnetic resonance spectroscopy (NMR), cryo-EM, and X-ray crystallography. It also creates a research immersion environment for domestic researchers through specialized personnel and infrastructure required for equipment operation.

▲ Director Tae-Young Kim is attending the Cryo-EM launching symposium and introducing the Central Instrumentation Research Institute (GAIA) and the consortium.

Vice President Woojong Yoon of Thermo Fisher Scientific responded, “We will continue to expand our technology cooperation, application education support, and global network-based partnership with GIST.”

In the symposium seminar session, domestic Cryo-EM authorities presented the latest research trends. Director Ji-oh Lee, the keynote speaker, presented ‘A plan to establish a university-industry cooperation system in the field of structural biology,’ Professor Jin-young Kang introduced the ‘Time-Resolved Cryo-EM’ technique, and Professor Se-cheol Oh introduced ‘Latest Research Cases Using Cryo-EM,’ and looked into the potential for technological advancement.

On the 21st and 22nd, a workshop using actual Cryo-EM equipment was held at GAIA. Participants received hands-on training on major analysis techniques such as single particle analysis and electron tomography.

GAIA Dr. Hwan Kim said, “I hope this symposium will be a valuable opportunity for researchers to collaborate and share technologies,” and added, “We will continue to expand the cutting-edge research base centered on Cryo-EM in the future.”

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