

GIST Graduate School of Energy Convergence, Ph.D. candidate Geon Heo receives the Korea Energy Technology Evaluation and Planning Institute President's Award

- Optimus Lab Lab (Supervisor: Yongsoon Park) student Geon Heo recognized for excellence in energy human resource development project at the '2024 Energy Innovation Talent Forum'
- Development of virtual synchronous machine technology for stabilizing power grids with a high proportion of renewable energy



▲ Geon Heo, a student in the Graduate School of Energy Convergence doctoral program (integrated)

The Gwangju Institute of Science and Technology (GIST, President Kichul Lim) announced that Geon Heo, a Ph.D. student (integrated) in the Graduate School of Energy Convergence (supervised by Professor Yongsoon Park), received the President's Award from the Korea Institute of Energy Technology Evaluation and Planning (KETP, President Seung-jae Lee) in recognition of his outstanding performance in the Energy Human Resources Development Project at the '2nd Half of 2024 Energy Innovation Talent Forum.'

Student Geon Heo has continuously participated in research projects on virtual synchronous machines, which refer to grid-forming inverters capable of inertial response, and has contributed to the advancement of virtual synchronous machines developed in the Power Electronics Lab, and has played a leading role in the effectiveness verification process targeting island regions experiencing actual frequency instability.

Virtual synchronous generator technology is an inverter control technology used for power grid connection of renewable energy and energy storage systems (ESS). It is attracting attention as a technology that can contribute to improving the stability of power grids with a high proportion of renewable energy by simulating the inertial response provided by conventional synchronous generators to stabilize grid frequency through inverters.

In the project, student Geon Heo achieved excellent research results by publishing two SCIE papers (one in the top 2.6% of 2023 JCR and one in the top 4.5%) through empirically verified research results.

Student Geon Heo said, "Thanks to the excellent research environment established through the support of the Energy Human Resources Development Project and the excellent guidance of Professor Yongsoon Park, we were able to achieve good research results. I would like to thank the professors and staff of the Graduate School of Energy Convergence who worked hard for the human resources development project so that students could focus on their research in a good environment."

He also said, "We hope that this research result will help expand the supply of renewable energy and contribute to carbon neutrality and power supply in underprivileged areas."

Meanwhile, the Energy Innovation Talent Forum, which celebrated its 15th anniversary this year, was held on Monday, October 28, hosted by the Ministry of Trade, Industry and Energy and organized by the Korea Institute of Energy Technology Evaluation and Planning, with the participation of approximately 300 people, including energy human resource development project implementers, energy companies, and industry-academia-research experts. An award ceremony for excellent energy human resource development performance was held, and a job consultation session with the participation of energy companies was held.

