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Section of Public Relations	Dongsun Cho Section Chief 062-715-2061	Nayeong Lee Senior Administrator 062-715-2062
Contact Person for this Article	Do-hyeong Jang, Master's student School of Mechanical Engineering 062-715-3241	
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School of Mechanical Engineering student Do-hyeong Jang won the Excellent Paper Award from the Korean Hydrogen and New Energy Society

- GIST (Gwangju Institute of Science and Technology, President Kiseon Kim) School of Mechanical Engineering master's student Do-hyeong Jang (advisor: Professor Sanggyu Kang) won the Best Paper Award for Green Hydrogen Production in 2021 by the Korean Hydrogen and New Energy Society (KHNES).

  - Established in 1989, KHNES held an academic conference in the hydrogen field for two days in Korea from May 27 to 28 and published 271 papers in nine categories.

- In this study, GIST School of Mechanical Engineering Professor Sanggyu Kang's research team developed a model that simulates the operation characteristics of an alkaline water electrolysis stack (core component) based on numerical analysis. In addition, by analyzing the change in power consumption of the BOP devices (core operating device, Balance of Plant) constituting the hydrogen production facility in addition to the stack, the operating performance change of the stack and system according to the operating variables was identified and the optimal operating conditions were derived.

- As a result of the test of the developed model, when the operating pressure is increased up to 10 bar, the system efficiency is increased due to the reduction of the heat consumption of the BOP device. After that, it was confirmed that the reduction of the stack efficiency had a dominant effect, and that the system efficiency also decreased when the operating pressure increased.

- This is expected to contribute to the vitalization of the hydrogen economy by designing a high-efficiency water electrolysis system that stably produces green hydrogen and by further strengthening the price competitiveness of green hydrogen.

□ Best Paper Award winner Do-hyeong Jang said, "I am very honored to receive an award from a prestigious academic society. As the hydrogen society is attracting attention recently, I will devote more effort to related research in the future to contribute even more through water electrolysis technology."

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