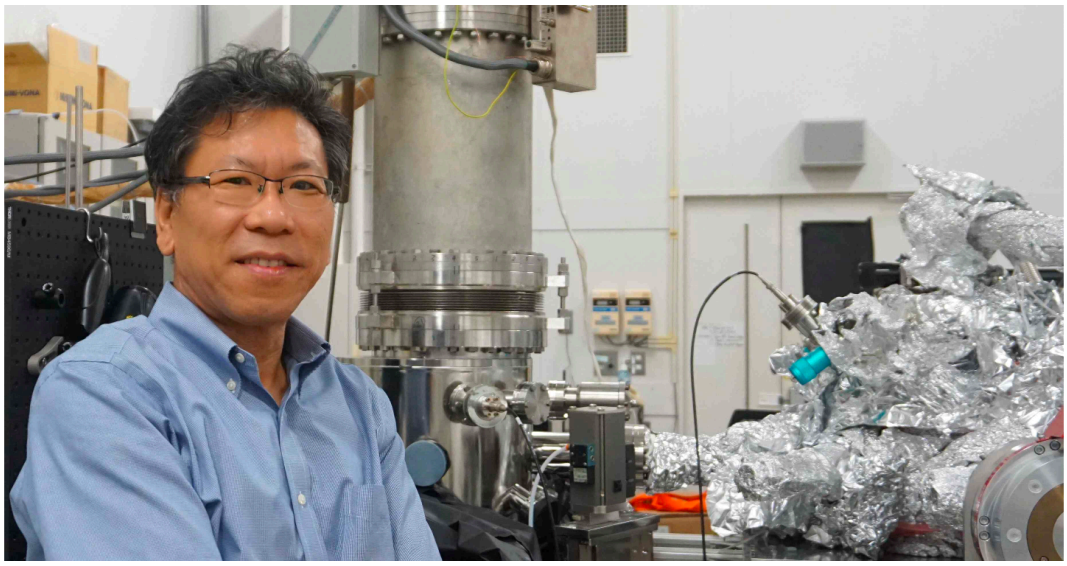
Professor Yousoo Kim, a world-renowned expert in surface and interface chemistry, takes office at GIST... Leads IBS Quantum Conversion Research Group

- Launched on September 1st, IBS GIST Campus 'Quantum Transformation Research Group' Director... Goal of creating innovative functions and properties expressed by quantum transformation phenomenon, Korea-Japan active joint research plan
- President Kichul Lim "Enabling the development of human civilization through world-class basic science research", IBS President Do-Young Noh "The research group will become a bridge for international cooperation and drive the development of the global chemistry community"



▲ Yousoo Kim, Director of the IBS Quantum Conversion Research Group

The Gwangju Institute of Science and Technology (GIST, President Kichul Lim) announced that Professor Yousoo Kim of the University of Tokyo, the first Korean to be selected as a chief scientist at the Japanese Research Institute of Physical and Chemical Research (RIKEN), has been appointed as a professor of chemistry.

Professor Yousoo Kim, who was appointed as of September 1, will be the head of the 'Quantum Conversion Research Group' at the Institute for Basic Science (IBS)* GIST Campus, which will be launched on the same day.

* IBS, a comprehensive research institute established for world-class basic science research, has established research groups, which are research organizations, at its headquarters or related universities. Among these, the 'campus research groups' are located at science and technology-specialized universities such as GIST, Korea Advanced Institute of Science and Technology (KAIST), Ulsan National Institute of Science and Technology (UNIST), and Pohang University of Science and Technology (POSTECH).

Professor Yousoo Kim (56 years old) graduated from the Department of Chemistry at Seoul National University and received his doctorate from the Department of Applied Chemistry at the University of Tokyo. He has continued his research at RIKEN and the University of Tokyo, and in 2015, he was selected as a senior scientist, the highest position for a researcher at RIKEN, and has led the Surface and Interface Science Laboratory*. Professor Kim is the first Korean scientist to hold this position. He was also appointed as a professor at the Department of Applied Chemistry at the University of Tokyo in 2022.

* The RIKEN organization is largely divided into laboratories and centers. There are 40 laboratories in operation, including the Surface and Interface Science Laboratory led by the newly appointed director, Yousoo Kim. The chief scientist, who is the head of each laboratory, is guaranteed tenure and leads free and long-term research.

Professor Kim is considered a world-renowned researcher in the field of surface and interface chemistry. Surface chemistry research is so difficult that Wolfgang Pauli, who won the Nobel Prize in Physics in 1945, once said, “God created matter, but the devil created surfaces.” This is because the chemical tools learned in textbooks are often not applicable to surface research.

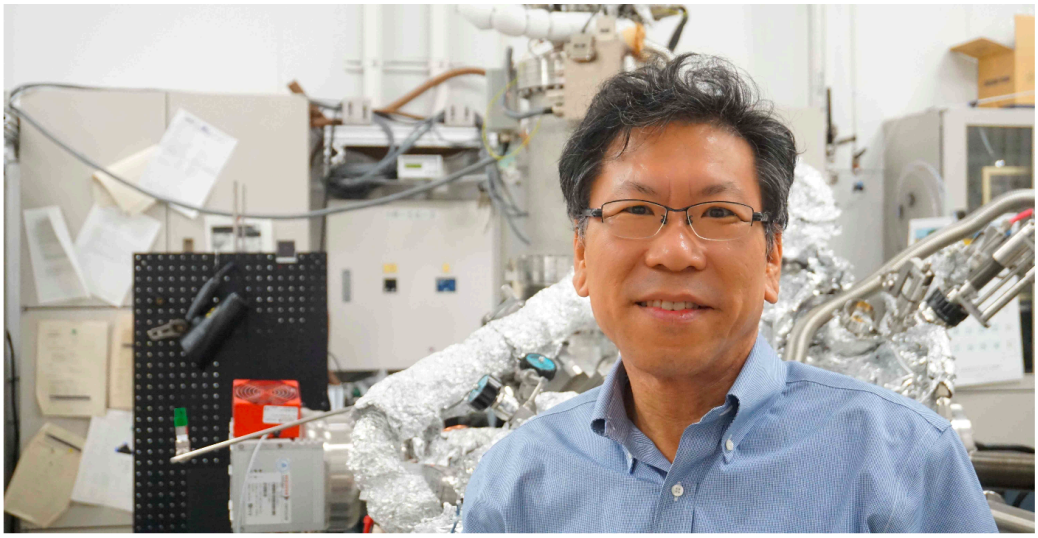
To study surfaces, new tools are needed. In Professor Kim’s case, he uses a scanning tunneling microscope (STM) to observe and study chemical reactions occurring on the surface and interface of materials at the atomic or molecular level.

Representative achievements include: ▲ Research measuring the photocurrent generated within a single molecule at the atomic level (《Nature》 (2022)); ▲ Development of a precise nano-spectroscopy method that can directly measure the electronic structure and optical properties of nanomaterials (《Science》 (2021)); ▲ Research suggesting a new luminescence mechanism that can significantly reduce the energy required to operate organic light-emitting diodes (OLEDs) (《Nature》 (2019)).

Based on these outstanding achievements, Professor Kim has received many prestigious scientific awards, including the Japanese Ministry of Education, Culture, Sports, Science and Technology Science and Technology Commendation (2018), the Japanese Molecular Science Society International Academic Award (2018), and the Japanese Chemical Society Academic Award (2019).

The ‘Center for Quantum Conversion Research’ led by Professor Kim has set a goal of developing an innovative methodology to quantitatively measure and control interactions between quantum states and to create innovative functions and properties that are expressed by quantum transformation phenomena.

In particular, they are planning active joint research between Korea and Japan by utilizing the infrastructure of Professor Kim, who has been working in Japanese academia for the past 20 years.



Professor Kim said, "The foundation of technologies that have brought convenience to mankind, such as catalysts, batteries, and OLEDs, is the research of basic scientists who have studied reactions that occur on solid surfaces. At a time when I personally felt that a major change was needed in research, I decided to return to Korea because the direction of change and the goals of GIST and IBS were well aligned."

President Kichul Lim said, "We have worked closely with IBS to bring in Professor Yousoo Kim and have made great efforts. We hope that GIST will be able to contribute to the advancement of human civilization through world-class basic science research led by Professor Kim."

Do-Young Noh, IBS Director (Department of Physics and Photon Science professor at GIST), said, "As Director Kim Yu-su, who has established himself as a top researcher in Japan, returns to Korea to lead the IBS Center for Quantum Conversion Research, we believe that the research group will become a bridge for international cooperation and drive the development of the global chemistry community."

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