GIST holds opening ceremony for 'IBS Center for Relativistic Laser Science': Using the world's most intense laser to explore the fundamentals of extreme physics

- IBS Center for Relativistic Laser Science led by Director Kyung Taec Kim, an authority in the field of ultra-strong lasers, officially launched... Taking on the challenge of strong-field quantum electrodynamics research based at the GIST Department of Physics and Photon Science and the Advanced Photonics Research Institute

- IBS Director Do-Young Noh, PAL Director Heung-Sik Kang, Korea Institute of Photonics Technology Director Yong-Jin Shin, and other leading physics researchers in attendance

▲ On Friday, February 28, GIST held an opening ceremony for the Institute for Basic Science (IBS) Relativistic Laser Science Research Group, and attendees took a commemorative photo at the Ultrashort Photon Beam Special Research Building.

The Gwangju Institute of Science and Technology (GIST, President Kichul Lim) announced that it held the opening ceremony of the Center for Relativistic Laser Science (Director Kyung Taec Kim, GIST Department of Physics and Photon Science professor) at the Institute for Basic Science (IBS) at the International Exchange Building at 10:00 AM on Friday, February 28.

The opening ceremony was attended by IBS Director Do-Young Noh, Pohang Accelerator Laboratory (PAL) Director Heung-Sik Kang, Korea Institute of Photonics and Photonics Director Yong-Jin Shin, Pohang University of Science and Technology (POST) Professor Emeritus Goong-won Nam, Korea Atomic Energy Research Institute Senior Researcher Ki-tae Lee, as well as GIST President Kichul Lim, Vice President for R&DB Sungho Jeong, Vice President for Academic Affairs Sang-Don Kim, Vice President for Public Affairs Yonghwa Chung, Department of Physics and Photon Science Dean Keun-Young Kim, and Visiting Professor Chang Hee Nam of the Department of Physics and Photon Science, as well as other key figures, faculty, and students, and about 70 people.

With the IBS Center for Relativistic Laser Science in full operation, it has become the second IBS campus research group to operate at GIST, following the IBS Center for Quantum Conversion Research (Director: Yousoo Kim, Professor of Chemistry, GIST) launched in September of last year.

The opening ceremony began with a congratulatory address by President Kichul Lim, followed by congratulatory addresses by IBS Director Do-Young Noh, PAL Director Heung-Sik Kang, and Korea Institute of Photonics Technology Director Yong-Jin Shin. Afterwards, Director Kyung Taec Kim introduced the research direction and ultimate goal of the research group, and the ceremony concluded with a plaque unveiling ceremony and a tour of the research group's laboratory.

▲ Unveiling the signboard at the opening ceremony of the Institute for Basic Science (IBS) Center for Relativistic Laser Science.

In his congratulatory remarks, President Kichul Lim said, “I think that the ‘RelatiCenter for Relativistic Laser Science’ that is being launched today is like a probe taking off toward Mars. Just as the Mars probe directly experienced the unknown world and expanded human knowledge, I expect that the research group will use super-strong lasers to implement extreme environments and conduct research to fundamentally understand unknown natural phenomena.”

He also promised, “I believe that this research group will one day become the main player in winning the Nobel Prize, and I will spare no effort in supporting the research group so that it can achieve its goals. I hope that the ‘Center for Relativistic Laser Science’ that is advancing relentlessly toward unknown territory will achieve amazing and dazzling results.”

▲ GIST President Kichul Lim is giving a congratulatory speech at the opening ceremony of the Institute for Basic Science (IBS) Relativistic Laser Science Research Group.

IBS Director Do-Young Noh said, “The Center for Relativistic Laser Science is the core axis of the IBS optical science research cluster that will be launched in March. It will achieve the ‘new discovery’ that IBS essentially pursues and secure optical science capabilities that the country may require in the future, such as ultra-high-power laser applications. I hope that together with the Advanced Photonics Research Institute, GIST will become a new driving force for the development of a science and technology institute with strong basic science.”

▲ IBS Director Do-Young Noh giving a congratulatory speech at the opening ceremony of the Center for Relativistic Laser Science at the Institute for Basic Science (IBS).

Heung-Sik Kang, Director of Pohang Accelerator Laboratory, said, “I deeply sympathize with the vision of the research group to explore new physical phenomena using ultra-high-power lasers and contribute to the development of basic science and cutting-edge technology through this. I look forward to the research group’s activities even more, as it has the potential to expand beyond simple basic science exploration into various industries.”

Yong-Jin Shin, the director of the Korea Institute of Photonics Technology, said, “Research using ultrashort, ultra-intense lasers is an important challenge that will open up new possibilities that we have never experienced before, and through this, we expect it to play an important role not only in the advancement of science, but also in future industries and technological innovations.”

Director Kyung Taec Kim, who studies extreme physical phenomena using ultra-intense lasers, has achieved achievements such as discovering new extreme ultraviolet rays and developing laser pulse measurement methods, and is recognized as a world-class researcher in the field of ultra-intense laser physics through these achievements.

At the opening ceremony, Director Kim said, “We will contribute to the advancement of basic science by implementing and studying physical phenomena that are only found in extreme natural environments such as neutron stars or black holes using the world’s highest-power lasers owned by GIST. We will strive to develop new light sources and particle acceleration technologies to achieve regional economic and industrial innovations.”

▲ Director Kyung Taec Kim introduces the research group at the opening ceremony of the Institute for Basic Science (IBS) Center for Relativistic Laser Science.

Meanwhile, the IBS Center for Relativistic Laser Science (CoReLS), which was officially launched after the opening ceremony that day, aims to find the fundamental principles of extreme natural phenomena by

developing and utilizing world-class laser technology to implement extreme physical phenomena such as strong-field quantum electrodynamics and to provide interpretations of these phenomena.

In addition, it has a vision of building a global research network as an international laser research facility, while developing laser technology, light sources, and particle acceleration technology to advance basic science and contribute to the local economy and industrial innovation.

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