Gwangju Institute of Science and Technology

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Professor Kang Taek Lee receives 1st Hanseong Science Award

☐ GIST (President Seung Hyeon Moon) – Professor Kang Taek Lee of the Department of Chemistry is recognized for his outstanding achievements in the field of basic science (biophysical chemistry) and received the first Hanseong Science Award.

☐ Hanseong Sonjae Scholarship Committee (Director Ja-han Son) awarded three Hanseong Science Awards in 2018, which recognizes original research achievements of scientists who have the potential to achieve further achievements in the future.

◦ The winners were Professor Kang Taek Lee (GIST) in the field of chemistry, Professor Hong-gyu Park(Korea University) in the field of physics, and Professor Seok-yong Lee (Duke University) in the field of life sciences.

◦ The awards ceremony will be held at YBM Hall, YBM Training Center, on August 12, 2018. The event will be attended by about 180 high students and about 50 university students.

□ Professor Kang Taek Lee received his bachelor's, master's, and doctoral degrees in chemistry from Seoul National University, and he studied at Harvard University and Chicago University for three years as a post-doctoral researcher. In 2007, he became a senior researcher at the Korea Research Institute of Chemical Technology. He became interested in observing living organisms, living cells, rather than simple chemical systems, using real-time microscopy. Subsequently, he hypothesized that the green emission and the red emission of the upconversion nano particle (UCNP), which emits near-infrared light and emit visible light, undergo different mechanisms. He showed for the first time that continuous photoluminescence monitoring (imaging) is possible for long periods of time without the occurrence of optical blinking and flailing phenomenon.

◦ At GIST, Professor Kang Taek Lee has worked with about 8 graduate students and postdocs to show the movement of UC NP under real-time microscopy. UCNPs were introduced into living cells by real-time microscopy to photograph and continuously track movement of internal transport mechanisms. Through a series of physicochemical experiments and analysis, UCNP surface infinite modification methods and real-time location tracking combining FRET (fluorescence resonance energy transfer), he is conducting research on the kinetic subject of cell biology (mitochondrial tracing) and medical treatment (PDT, drug delivery).

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