



Prof. Dr. Hae June Lee

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Professor Hae June Lee received his B.S. degree with honors from the Department of Nuclear Engineering at the Seoul National University (SNU), South Korea, in 1994. He then joined the Plasma Application Modeling Group of Prof. Jae Koo Lee at Pohang University of Science and Technology (POSTECH), South Korea. He received his M.S. and Ph.D. degrees in physics in 1996 and 1998 from POSTECH. From September 1998 to January 2000, he was a postdoctoral researcher at the Basic Science Research Institute at POSTECH. During this period, his research addressed modeling and simulation of chaotic behaviors in beam-discharge and dusty plasmas and diocotron instabilities in a plasma shear flow. From January 2000 to May 2001, Dr. Lee worked for Prof. C. K. Birdsall in the Plasma Theory and Simulation Group at the University of California at Berkeley as a postdoctoral researcher in the development of radiation transport simulations for UV sources. After returning to South Korea for his military obligation, he worked in the Center for Plasma Accelerators at the Korea Electro-technology Research Institute (KERI) for laser-plasma interaction research, such as electron acceleration by laser wakefields and ion generation from laser-material interactions.

Since 2004, Prof. Lee has been a faculty member in the Department of Electrical Engineering at the Pusan National University (PNU), South Korea. His research broadly addresses computer simulations of low-temperature processing plasmas for semiconductor manufacturing, micro dielectric barrier discharges, atmospheric pressure plasmas, and numerical simulation of edge plasmas in Tokamaks. Recently, his research has included experiments on plasma applications in biology and medicine. He has collaborated with Prof. M. J. Kushner at the University of Michigan and Prof. J. P. Verboncoeur at Michigan State University as a visiting scholar at the Michigan Institute of Plasma Science and Engineering (MIPSE) from August 2012 to July 2023.

Prof. Lee is one of the leading scientists in the research field of kinetic plasma modeling and simulation of non-equilibrium low-temperature plasma society. He was the first to develop a two-dimensional parallelized particle-in-cell (PIC) simulation for discharge plasmas using a graphics processing unit (GPU), which changed the industry's thinking on PIC simulation. He actively serves the international plasma science community and has been participating in editorial boards of significant plasma journals and organization committees of many international conferences.