Prof. Ho Jun Kim

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Ho Jun Kim is a Professor in the Department of Mechanical Engineering at Hanyang University ERICA, where the group advances modeling and simulation for semiconductor thin-film manufacturing. Current interests include capacitively coupled plasma (CCP) and inductively coupled plasma (ICP) process simulations; thermal CVD; particle transport and contamination control; remote plasma cleaning; and surface chemistry modeling via molecular dynamics, ab initio calculations, and computational chemistry.

Prior to joining Hanyang University in September 2022, Ho Jun Kim held faculty appointments as Assistant Professor at Dong-A University (2018–2020) and Gachon University (2020–2022). In parallel with academic work, Ho Jun Kim has maintained strong ties with industry, serving as Visiting Professor at SK hynix (2019–2020) and at TES (2020–2022). Earlier, Ho Jun Kim spent ten years with Samsung Electronics' Memory Thin Film Technology Team, contributing to next-generation memory process development as Senior Engineer (2008–2014) and Principal Engineer (2014–2018).

Ho Jun Kim received the Ph.D. (May 2008) and M.S. (Aug 2004) in Mechanical Engineering from Texas A&M University, College Station, and the B.S. (Aug 2002) in Mechanical Engineering from Hanyang University. Recognition includes the Samsung Best Paper Award 2013 (Base Technology, Bronze), the 3rd J&L Tech Academic Award from the Korean Vacuum Society, and multiple conference paper distinctions (e.g., KISM).

Research Interests
Plasma process simulation (CCP, ICP) for deposition/etch in semiconductor manufacturing
Thin-film deposition and etching; contamination control and particle transport
Surface reaction and materials modeling (molecular dynamics, ab initio, computational chemistry)
Remote plasma cleaning (fluorine chemistry)

Technical Expertise
Process plasma—CCP: PE-TEOS, PE-SiN, ACL, PEALD-TiO$_2$, PEALD-SiO$_2$, PEALD-SiN, CF$_4$-Ar dry etch, PEALD-O$_2$/Ar, PEALD-N$_2$/Ar
Process plasma—ICP: HDP-SiO$_2$, HDP-SiN
Thermal CVD: DCS-WSi$_x$, CVD-TiN
Particle transport: contamination analysis, inertial particle modeling
Remote plasma cleaning: fluorine chemistry
Surface modeling: molecular dynamics, ab initio calculation, computational chemistry