BIOGRAPHY

Advanced Packaging Summit 2025

Name: SangHoon Shin
Title/ Position: Assistant Professor
Company: Hanyang University ERICA

SangHoon Shin, Ph.D. has been an Assistant Professor at Hanyang University ERICA since 2025, where he leads the Shin Lab focused on advanced semiconductor packaging, heterogeneous integration, and full-stack reliability engineering. He is responsible for developing research programs on 2.5D/3D IC integration, logic-memory co-packaging, and predictive reliability modeling spanning FEOL, BEOL, and package-level technologies. His lab actively explores novel packaging architectures for AI, automotive, and high-performance computing systems, and engages in international collaboration with academia and industry to address the most pressing challenges in system-on-chip (SoC) packaging.

Prior to joining Hanyang University, **Dr. Shin** served as a Semiconductor System Engineer at Tesla, where he led the development and qualification of 2.5D and 3D SoC packages for AI-based autonomous driving, Robot systems, including Chip-on-Wafer-on-Substrate (CoWoS) solutions for Tesla's Dojo platform. He was responsible for defining and engineering semiconductor system, reliability qualification flows based on beyond AEC-Q standards, performing failure analysis across wafer and board levels, and driving the design-for-reliability (DFR) strategy for next-generation AI hardware. Before Tesla, **Dr. Shin** held key R&D roles at Apple, Intel, and IBM. At Apple, he was the primary reliability engineer for Apple Silicon-based Mac products (M1, M2), overseeing reliability test planning, field failure diagnostics, and environmental qualification. At Intel, he focused on engineering Phase Change Memory, FEOL, BEOL reliability modeling, and at IBM, he researched neuromorphic transistors and biosensor platforms using advanced FinFET and SOI technologies.

Dr. Shin received a Ph.D. in Electrical and Computer Engineering from Purdue University, U.S. and an M.S. in Electrical Engineering and Information Systems from the University of Tokyo, Japan. He also earned a B.S. in Electronic Engineering and Computer Science from Hanyang University South Korea, with a minor in Business Administration. He has authored over 40 peer-reviewed publications (18 as first author), presented at premier conferences such as IEDM and IRPS, and holds two U.S. patents. **Dr. Shin** also received a Best Poster Award at the IEEE INC and has active collaborations with international research institutes and industry partners.