Prof. Hocheon Yoo

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Hochoen Yoo is an associate professor in the department of electronic engineering at Hanyang University, Seoul, South Korea, since 2025. From 2020 to 2025, he served as an assistant and then associate professor at Gachon University, Seongnam, South Korea. He received his B.S. degree in electronic engineering from Hanyang University in 2014 and his Ph.D. from the department of creative IT engineering at POSTECH in 2018. In 2019, he worked as a postdoctoral researcher at the Materials Research Center, Northwestern University, Evanston, IL, USA. His current research interests include emerging semiconductor materials, neuromorphic and in-sensor computing devices, thin-film electronics, and sensors for healthcare and biomedical applications. His research group, We Design Devices, actively pursues interdisciplinary and industrial collaborations to translate device-level innovations into practical technologies.

Prof. Yoo is a leading researcher in next-generation electronic devices, neuromorphic hardware, and secure semiconductor systems. Over the past five years, he has published around 140 SCIE papers, including major works in Nature Communications, Advanced Materials, Advanced Functional Materials, Device, and ACS Nano. He has introduced innovative transistor platforms such as Gaussian-mirroring and Gaussian-Sigmoid devices, enabling real-time analog inference and hardware deepfake detection. His group also developed multi-valued graphene-based PUF/TRNG technologies with unprecedented conductance variability for advanced security. These contributions, combined with his strong international collaborations and leadership in semiconductor research programs, make him highly suitable for recommendation as an invited expert.