

YEON GEUN YOOK

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AREAS OF INTEREST

- Low Temperature Plasma / Plasma Modeling and Simulation
- Plasma Etching / Semiconductor Fabrication Process

EDUCATION

- UNIVERSITY OF MICHIGAN, Ann Arbor, MI, USA** **08/2023-Present**
Ph.D. Student, Electrical Engineering and Computer Science
- Advisor: Prof. Mark J. Kushner
-Computational Plasma Science and Engineering Group
- YONSEI UNIVERSITY, Seoul, Republic of Korea** **03/2010-02/2016**
B.S., Electrical and Electronic Engineering

WORK EXPERIENCE

- SAMSUNG ELECTRONICS CO., LTD., Hwaseong, Republic of Korea** **03/2016-Present**
- Staff Engineer, Advanced Process Development Team, Semiconductor R&D Center (03/2023-Present)***
Engineer, Advanced Process Development Team, Semiconductor R&D Center (01/2021-02/2023)
Engineer, Flash Process Development Team, Semiconductor R&D Center (03/2016-12/2020)

- Duty: Advanced patterning etch process
-Development of vertical NAND High Aspect Ratio Contact (HARC) channel hole etch process
-Development of vertical NAND back end of line metallization etch process for bonding technology
-Development of vertical NAND word-line formation and front end of line etch process
-Development of 3D-DRAM etch process
- Notable achievement:
-Development of HARC process conditions with an aspect ratio above seventy and establishment of conditions applicable to HARC-merged structure
- Establishment of reaction mechanism according to process parameter changes and channel hole etch process conditions using cryogenic plasma
- External collaboration: LAM Research Co., Applied Materials Co., and Tokyo Electron Co.

Additional Experience

- Intern, Advanced Equipment Development Project Team, Semiconductor R&D Center (01/2015-02/2015)*
-Evaluation of uniformity improvement of metal contact patterns

AWARDS & HONORS

- 2023 Samsung Best Paper Awards, Bronze Award, Samsung Groups 09/2023
Full-Ride Scholarship Finalist, overseas academic training program funded by Samsung Electronics 10/2022
2021 SRD e-Technical Journal Junior Paper Award, Samsung Electronics 01/2022

PATENTS

1. J. Y. Park, H. Kim, and **Y. G. Yook**, Semiconductor Device Including Channel Structure and Flow-Through Electrodes, Electronic System, and Method of Forming the Same. (Korea – Application No. P20210116688, US – Application No. US17/693328, China – Application No. 202211064994.4)
2. J. Y. Park, H. Kim, **Y. G. Yook**, and Y. S. Lee, Semiconductor Memory Devices, Electronic Systems including the Same, and Fabricating Methods of the Same. (Korea – Application No. P20210154857, US – Application No. US17/819330, China – Application No. 202211409023.9)
3. **Y. G. Yook**, H. Kim, and Y. S. Lee, Three-Dimensional Semiconductor Memory Device and Electronic System Including the Same. (Korea – Application No. P20210188760, US – Application No. US18/080325, China – Application No. 202211641903.9)
4. Y. S. Lee, **Y. G. Yook**, and H. Kim, Semiconductor Device and Electronic System Including the Same. (Korea – Application No. P20220026988, US – Application No. US18/097332, China – Application No. 202310177405.1)

SAMSUNG INTERNAL PAPERS (Not published)

1. K. S. Chung, **Y. G. Yook**, G. W. Kim (2023). Cutting-edge HARC Merge Scheme of VNAND Memory using Cryogenic Etching Challenges and Solutions. *Samsung Best Paper Awards 2023*.
2. K. S. Chung, **Y. G. Yook**, G. W. Kim, H. Kim, and S. W. Park (2022). Feasibility Study of Cryogenic Etch in HARC merge scheme with Hole-type Cut. *SRD e-Technical Journal 2022 2nd Half*.
3. **Y. G. Yook**, Y. S. Lee, K. S. Chung, H. Kim, and S.W. Park (2021). Dry Etch Characteristics of Oxide Film Using Ch. Hole Etch Process for the HARC MERGE Structure. *SRD e-Technical Journal 2021 2nd Half*.
4. **Y. G. Yook**, Y. T. Jee, H. Kim, and J. H. Yoo (2020). A Study on the Characteristics of Halogen Radical Effect in Cryogenic Etch Process for HARC in V-NAND Devices. *SRD e-Technical Journal 2020 1st Half*.

ACTIVITIES

<i>Selected Freshman Trainer</i> , HR team, Samsung Job Mentoring and Recruitment	09/2021
<i>Selected Freshman Trainer</i> , HR team, Samsung Shared Value Program for new employees	11/2020-01/2021
<i>Volunteer</i> , Mentoring services, Geoje High School, Hope Fellowship, Yonsei University	02/2014

MILITARY SERVICE

REPUBLIC OF KOREA AIR FORCE, Gyeonggi-do, Republic of Korea <i>Discharged as a Sergeant</i> , 15 th Special Missions Wing	06/2011-06/2013
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