



# 제 31회 한국반도체학술대회

The 31st Korean Conference on Semiconductors

2024년 1월 24일(수)-26일(금) | 경주화백컨벤션센터(HICO)

2024년 1월 25일(목), 10:55-12:40

Room G(201), 2층

K. Memory (Design & Process Technology) 분과

[TG2-K] RRAM and Neuromorphic Device II

좌장: 최신현 교수(KAIST), 김형진 교수(인하대학교)

<p>TG2-K-1 10:55-11:10</p>	<p>Selector-less V-CBRAM with High Nonlinearity and Low-power Operation via Tunnel-gap Controllable Two-Dimensional Electron Gas (2DEG) Electrode Jiho Kim, Ohhyuk Kwon, and Hyunsang Hwang POSTECH</p>
<p>TG2-K-2 11:10-11:25</p>	<p>Robust Molybdenum Disulfide Nanograined Memristors Fabricated via PECVD Process Gunhoo Woo<sup>1</sup>, Hyeong-U Kim<sup>2</sup>, Byung Chul Jang<sup>3</sup>, Jae-joon Kim<sup>4</sup>, Hocheon Yoo<sup>5</sup>, and Taesung Kim<sup>1</sup> <sup>1</sup>Sungkyunkwan University, <sup>2</sup>KIMM, <sup>3</sup>Kyungpook National University, <sup>4</sup>Seoul National University, <sup>5</sup>Gachon University</p>
<p>TG2-K-3 11:25-11:40</p>	<p>Fabrication and Resistive Switching Characterization of HfO<sub>x</sub>-Based 4-layer VRRAM for High-density Synapse Array Subaek Lee<sup>1</sup>, Sungjoon Kim<sup>2,3</sup>, Hyojin So<sup>1</sup>, Gyeongpyo Kim<sup>1</sup>, Doohyung Kim<sup>1</sup>, Minkang Kim<sup>1</sup>, Juri Kim<sup>1</sup>, Hyesung Nah<sup>1</sup>, Woo Young Choi<sup>2,3</sup>, and Sungjun Kim<sup>1</sup> <sup>1</sup>Division of Electronics and Electrical Engineering, Dongguk University, <sup>2</sup>Department of Electrical and Computer Engineering, Seoul National University, <sup>3</sup>ISRC, Seoul National University</p>
<p>TG2-K-4 11:40-11:55</p>	<p>Superior Ion Retention of Divalent Magnesium-ion Based Si/MgF<sub>2</sub>/WO<sub>x</sub> Electrochemical RAM for Neuromorphic Systems Heebum Kang, Kyumin Lee, and Hyunsang Hwang Department of Material Science and Engineering, POSTECH</p>



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<p>TG2-K-5 11:55-12:10</p>	<p>Implementation of Multiple-weak-filaments Type Memristor based on Cu:Te/ TaO<sub>x</sub> with a Te Interfacial Layer for Highly Reliable Artificial Synapse Keonhee Kim<sup>1,2,3</sup>, Jae Gwang Lim<sup>1,2,3</sup>, Sung Jae Park<sup>1,2,3</sup>, Gyutaek Oh<sup>1,4</sup>, Yeonjoo Jeong<sup>1</sup>, Jaewook Kim<sup>1</sup>, Suyoun Lee<sup>1</sup>, Joon Young Kwak<sup>1</sup>, Jongkil Park<sup>1</sup>, Gyu Weon Hwang<sup>1</sup>, Kyeong-Seok Lee<sup>1</sup>, Seongsik Park<sup>1</sup>, Hyun Jae Jang<sup>1</sup>, Byeong-Kwon Ju<sup>2,3</sup>, Jong Keuk Park<sup>1</sup>, and Inho Kim<sup>1</sup> <sup>1</sup>Center for Neuromorphic Engineering, KIST, <sup>2</sup>Display and Nanosystem Laboratory, Korea University, <sup>3</sup>School of Electrical Engineering, Korea University, <sup>4</sup>Division of Electronics and Electrical Engineering, Dongguk University</p>
<p>TG2-K-6 12:10-12:25</p>	<p>Investigating the Effect of Oxygen Vacancy Control in Sputter-Deposited Ta<sub>2</sub>O<sub>5-x</sub> Films on Synaptic Device Properties Chae Min Yeom<sup>1</sup>, Hyuk Min Kwon<sup>2</sup>, Hyeon Seung Lee<sup>1</sup>, and Hi Deok Lee<sup>1</sup> <sup>1</sup>Chungnam National University, <sup>2</sup>Semiconductor Convergence Campus of Korea Polytechnics College</p>
<p>TG2-K-7 12:25-12:40</p>	<p>Artificial Neuron based on Toxic Element-free SiO<sub>x</sub> Threshold Switch for Unconventional Oscillatory Neural Networks Eunryeong Hong, Hyun Wook Kim, Seonuk Jeon, Nayeon Kim, and Jiyong Woo School of Electronic and Electrical Engineering, Kyungpook National University</p>