



TOHOKU
UNIVERSITY



5th CIES Technology Forum

March 24 - 26, 2019

DAY 1

Registration

[www.cies.tohoku.ac.jp/
5th_forum/entry.html](http://www.cies.tohoku.ac.jp/5th_forum/entry.html)

Registration fee: Free

Banquet fee: 7,000JPY

**Pre-registration deadline:
March 20, 2019**

**Tohoku University
Center for Innovative Integrated
Electronic Systems**

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Sendai, Miyagi, 980-8572, JAPAN
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**The Sustainable Growth in Physical Space
with Innovative Integrated
Electronic Technologies**

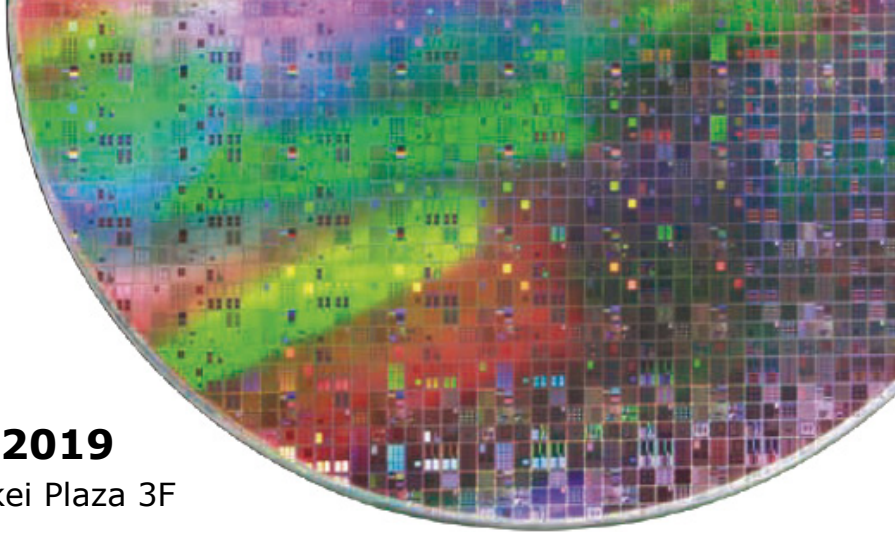
*From ultra low power edge computing
and car electronics to AI systems*

**International Symposium
March 24, 2019**

Otemachi Sankei Plaza 3F
1-7-2 Otemachi, Chiyoda-ku, Tokyo 100-0004, Japan

Invited Speakers	Shigeki Tomishima (Intel) Shinhee Han (Samsung) William Gallagher (TSMC) Hideo Sato (Tohoku University) Seung H. Kang (Qualcomm) Masanori Natsui (Tohoku University)
Chair	T. Endoh (Tohoku Univ.)
Committee	T. Endoh, H. Sato, Y. Takahashi (Tohoku Univ.)
Secretariat	T. Shinada, Y. Kadowaki (Tohoku Univ.)
Sponsors	CAO, MEXT, METI, JPO, JSPS, JST, NEDO, INPIT

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**International
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<<<Registration desk open at 9:45am>>>

10:30-10:45	Opening remarks	Tetsuo Endoh (Tohoku University)
10:45-11:30	Invited talk 1 Expectations for the spintronics memory in AI Computing systems	Shigeki Tomishima (Intel)
11:30-12:15	Invited talk 2 Current status and future of embedded MRAM technology	Shinhee Han (Samsung)
12:15-13:45	Lunch	
13:45-14:30	Invited talk 3 Recent Developments and Next Directions for Embedded MRAM Technology	William Gallagher (TSMC)
14:30-15:15	Invited talk 4 High-performance and high-endurance 128Mb-density STT-MRAM by an integration process development	Hideo Sato (Tohoku University)
15:15-15:30	Break	
15:30-16:15	Invited talk 5 Pathfinding for MRAM in the era of sub-10nm CMOS	Seung H. Kang (Qualcomm)
16:15-17:00	Invited talk 6 Impact of MTJ-Based Nonvolatile Microcontroller LSI for IoT Applications	Masanori Natsui (Tohoku University)
17:00-17:10	Closing remarks	Shoji Ikeda (Tohoku University)
17:30-19:00	Banquet (Otemachi Sankei Plaza 3F)	

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