Symposium (Oral) | Symposium | Spin Devices for the IoT/IoH Era

[10p-M101-1~6]Spin Devices for the IoT/IoH Era

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Sun. Mar 10, 2019 1:30 PM - 4:45 PM M101 (H101)

△ : Presentation by Applicant for JSAP Young Scientists Presentation Award

▲ : English Presentation

▼ : Both of Above

No Mark : None of Above

4:15 PM - 4:45 PM

[10p-M101-6]Development of ultra-low-power driven spintroncs devices towards the realization of safe, secure and sustainable advanced-intellectual eco-society

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Keywords:spintronics, micrcomputer, Voltage Controlled MRAM

"Innovative spintronics technologi" making use of the nonvolatility of electron spin which is the world's smallest magnet innovates not only memory but also logic processing section from volatile to nonvolatile computer electronics. We will introduce the efforts of the Cabinet Office ImPACT program to challenge the reform of the hierarchy. In the " Spintronics Integrated Circuit Project" challenging breakthrough from integrated circuits, we will develop a nonvolatile microcomputer driven by energy harvesting of 100μW or less aimimg to realize IoT sensor network autonomous with "harvested" electric power fron environment. In " Voltage Driven MRAM Project" challenging breakthrough from MTJ physics, we introduce the development of new concept memory with 1fJ write energy per bit aiming at ultra-low power of mobile equipment.