Special Issue

Spin-Orbitronic Devices and Integrated Applications

Message from the Guest Editor

At present, the unprecedented boom of data manipulation is pushing information-processing devices forward with the prerequisite nature of the simultaneous high-speed operation and ultra-low energy consumption. The recently developed spin-orbit torque (SOT)-induced magnetization switching paradigm has been fueling opportunities for spin-orbitronic devices enabled with new electrical control of magnets via spin-orbit interaction under sub-nanosecond and sub-picojoule regimes. This Special Issue aims to further the momentum of both fundamental research and integrated applications of spin-orbitronic devices. The enrichment topics to be covered include (but are not limited to): (1) Cutting-edge SOT memory in CMOS-compatible and scalable methodologies for field-free magnetization switching. (2) The scientific and technological development of spin-orbitronics towards emerging applications; (3) Extensive research of spin-orbitronic device modeling, process integration, and the interdisciplinary spintronic fields engaged in silicon circuits. (4) Investigations of futuristic spintronic materials and devices —spin-orbit logic, magnonics, topotronics, skyrmionics etc.

Guest Editor

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Message from the Editor-in-Chief

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