

## Special Issue

# Recent Advances in Memory Materials and Devices

### Message from the Guest Editor

Significant progress has been made in semiconductor memory, especially phase-change memory (PCM) based on heterostructure and superlattice structure materials, which have attracted considerable attention due to their excellent performance. Phase-change heterostructure (PCH) can overcome the low-precision bottleneck that limits multibit storage and parallel computing in conventional PCM, offering novel physical and chemical properties for semiconductor memory devices. The development of a new heterostructure for PCM and ovonic threshold switch (OTS) is necessary for their emerging practical device applications. For instance, Sb<sub>2</sub>Te<sub>3</sub>/TiTe<sub>2</sub>, the multilayer PCH architecture was designed for two-dimensional (2D) phase transitions in nanometer-thick Sb<sub>2</sub>Te<sub>3</sub> phase-change material sublayers that are clamped by confinement TiTe<sub>2</sub> sublayers, enabling well-controlled cumulative/progressive SET (crystallization) and iterative/stepwise RESET (amorphization) operations. We invite contributions of research articles and review on topics including but not limited to the theoretical calculation, synthesis, characterization, and application of novel heterostructures for PCM or OTS.

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### Deadline for manuscript submissions

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## Micromachines

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*Micromachines* (ISSN 2072-666X) is a forum for cutting-edge interdisciplinary research on micro and nanoscale science and technology. We emphasise the practical, real-world value of micro and nanotechnologies that will place *Micromachines* in a leading position among engineering and technology journals.

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