# 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, Sb2Te3/TiTe2, the multilayer PCH architecture was designed for two-dimensional (2D) phase transitions in nanometer-thick Sb2Te3 phase-change material sublayers that are clamped by confinement TiTe2 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.

### Guest Editor

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### Deadline for manuscript submissions

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