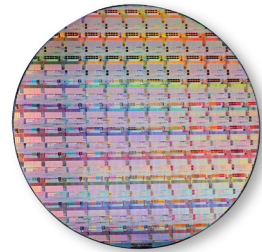


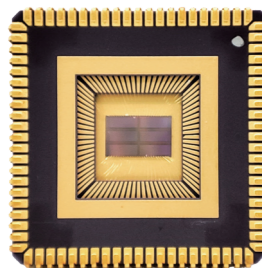
Research Group of Phase Change Memory Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences



微结构表征设备双球差电子显微镜
Cs-corrected TEM



12英寸相变存储器晶圆
12-inch PCM wafer



相变存储器芯片
PCM Chip

Major contributors

- Zhu Min
- Liu Weili
- Chen Houpeng
- Chen Xiaogang
- Lei Yu
- Zhou Xilin

The phase change memory (PCM) research group in SIMIT have focused on the fundamental theory and application-oriented research of PCM. The group proposed the theory of octahedral unit with three-dimensional confinement, developed Sc-Sb-Te phase change materials featuring picosecond switching and discovered the brand-new 'crystalline-liquid' transition mechanism in single element Te switching device that provides a novel solution for three-dimensional high-density PCM. The group have developed 4 to 128Mb PCM chips by collaborating with SMIC, which have been applied to the power grids and microsattellites. They released the first embedded PCM chip in China and the independent intellectual property rights have been granted on materials, devices, integration process, chip design and applications. With the strong support from SIMIT and XINCHU, the group are devoting themselves to the mass production and extensive application of PCM chips, and have laid a solid foundation for the independence and nationalization of the advanced data storage industry in China.

Outstanding contributors of this research group

Song Zhitang

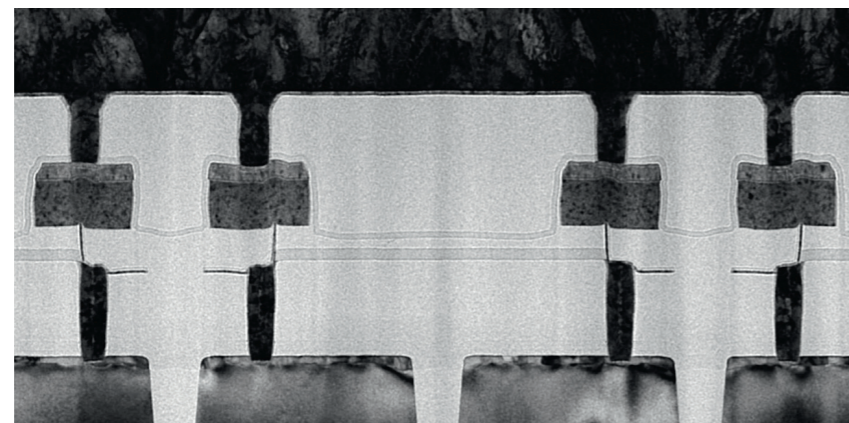
Set up the phase change memory research in China; Proposed the theory of octahedral unit with three-dimensional confinement; Developed brand-new Sc-Sb-Te phase change material and single element Te switching material; Established a 12-inch trial line of PCM to complete the verification of key IP materials and the industrialization of PCM chips.

Li Xi

In charge of the PCM design and product development, Leading the chip design and application of the first embedded mass-produced PCM chip as well as the application of computing in memory using phase change memory. Responsible for the cooperation with Huawei and other companies for developing PCM chips and applications.

Song Sannian

In charge of the development of PCM materials and processes, and the development of phase change materials for mass production. Responsible for the PCM R&D platform and the cooperation with YMTC and other companies to promote the industrialization of PCM.



芯片截面
Cross-sectional image of PCM cell



研究团队合影
Research group photo

相变存储器研究集体

推荐单位:

研究集体主要科技贡献:

PCM
Sc-Sb-Te
PCM
Te
4-128Mb PCM
PCM
PCM

研究集体突出贡献者



宋志棠 Song Zhitang

宋志棠

ScSbTe Te 12
PCM



李喜 Li Xi

李喜

PCM
PCM

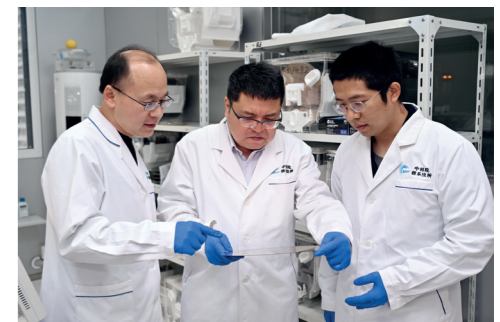


宋三年 Song Sannian

宋三年

PCM
PCM
PCM

研究集体主要完成者



芯片测试现场
chip test



研讨现场
workshop