

# **A 130nm Technology node Phase Change Memory using Oxygen doped GeSbTe**

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## **Abstract**

A 130nm technology node Phase Change Memory (PCM) using Oxygen doped GeSbTe is presented. PCM is one of the most promising candidates for non-volatile memories in the next generation. However, the low-power operation of PCM has been considered the most challenging issue for the commercialization of PCM. Several PCM cell structures and the results of material investigation were reported, and the power of PCM operation reduced significantly in recent years. We demonstrate the data on 1.5-V and 100-uA operation of an oxygen-doped GeSbTe PCM for embedded memory applications. The circuit and array issues associated with the 1.5-V operation are proposed as well