

# **The Ovonic Phase Change Memory - Past, Present, Future**

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## **Abstract**

I will present a brief historical description of the fundamental driving force in my inventing phase change and fast electronic switching mechanisms. I will then describe the basic differences between the various Ovonic devices and conventional semiconductors and will discuss the fundamentals of amorphous and disordered materials and what makes them atomically engineered devices, e.g. one can make devices thinner, faster, with lower current, as well as very importantly, be able to continuously shrink devices. These devices have been nanostructures from the very beginning. I have personally been working with nanostructures since the 1940's and 1950's.

I will discuss the present applications and describe what the future holds and how they can greatly impact our global information society. I couldn't agree more with what a leading figure from Intel said, "The phase change memory gets pretty close to Nirvana."