

Embracing Challenges of Megatrend with Bio-Organic Based Resistive Switching Memory

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Abstract

Bio-organic material is defined as a new group of engineering material that originated from living things, once living things, plant, and biological extract. This sustainable and green material, after gone through a precise formulation and well control process condition, can be used to fabricate into functional electronic devices and to resolve issue of electronic waste. Due to huge demand of digitization, it is expected that many typical global issues that currently encounter will become more serious in the near future. Hence, innovative solutions need to be used to address these concerns; particularly when the World is embracing the challenges of Megatrend. Electronic waster and energy waste are the two major issues that can be simultaneously resolved by using bio-organic materials to produce electronic gadgets with less operational energy. To show case this concept, solid states non-volatile memory based on resistive switching technology will be elaborated in this Talk. The development and design requirements of the memory will be explained and the adoption of the memory for an energy-efficient neuromorphic computation application will be briefly discussed.