Bandyopadhyay

Magnetic Straintronics

An Energy-Efficient Hardware Paradigm for Digital and Analog Information Processing

This book covers the new field of straintronics, using strain switched nanomagnets for extremely energy-efficient computing, information processing, communication, and signal generation. Based on well-established CMOS technology, traditional electronics have two significant shortcomings: excessive energy dissipation and volatility, which is the inability to retain information after power has been switched off. Straintronics is more energy-efficient and non-volatile (but also more error-prone), allowing it to eclipse traditional electronics in niche areas that are increasingly attracting attention, such as image processing and probabilistic computing, computer vision, machine learning, neuromorphic networks, probabilistic computing, and belief networks. Magnetic Straintronics: An Energy-Efficient Hardware Paradigm for Digital and Analog Information Processing introduces straintronics and the technology's myriad applications for researchers, engineers, and scientists in electrical engineering, physics, and computer engineering.

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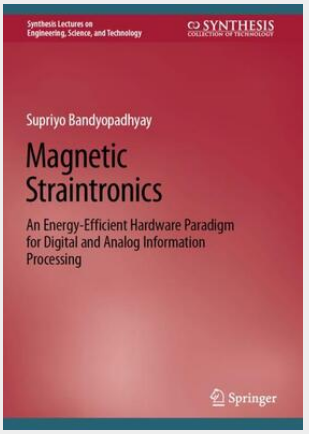

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