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Novel Computing Architectures and Digital Circuit Designs Using Memristors and Memristive Systems

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Message from the Guest Editors

Memristors have shown much promise as a solution for processing-in-memory architectures due to its non-volatile memory retention, high density, low power, nanoscale geometry, and so on. With ongoing advances in material science and device physics, physically-derived and empirically-based memristor models have broadened the ways in which we may design, simulate, and test exotic computing systems and architectures. Furthermore, integrating memristors with modern CMOS processes technology has expanded the spectrum of research on memristive crossbar arrays, digital logic circuits, and in-memory processors, which play an important role in neuromorphic computing systems, novel computing architectures and dynamical memristive networks.

The purpose of this Special Issue on “Novel computing architectures and digital circuit designs using memristors and memristive systems” is to provide a comprehensive overview of memristor fabrication, characterization, and modeling; memristor crossbar arrays, memristor logic circuit designs, processing-in-memory architectures, and other circuit or systems level applications that harness the dynamical properties of memristors.



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Special Issue



Editor-in-Chief

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