1. Record Nr. UNINA9910366616103321

Autore	Sasamal Trailokya Nath
Titolo	Quantum-Dot Cellular Automata Based Digital Logic Circuits: A Design Perspective / / by Trailokya Nath Sasamal, Ashutosh Kumar Singh, Anand Mohan
Pubbl/distr/stampa	Singapore : , : Springer Singapore : , : Imprint : Springer, , 2020
ISBN	981-15-1823-8
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (184 pages)
Collana	Studies in Computational Intelligence, , 1860-949X ; ; 879
Disciplina	621.395
Soggetti	Nanotechnology Logic design Artificial intelligence Computer logic Nanotechnology and Microengineering Logic Design Logic in AI
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- QCA Background -- Fundamental of Reversible Logic -- Design of Reversible Gates in QCA -- Designs of Adder Circuit in QCA -- Array Dividers in QCA -- Design of Arithmetic Logic Unit in QCA -- Design of Registers and Memory in QCA -- Clocking Schemes for QCA -- Conclusion and Possible Future Direction.
Sommario/riassunto	This book covers several futuristic computing technologies like quantum computing, quantum-dot cellular automata, DNA computing, and optical computing. In turn, it explains them using examples and tutorials on a CAD tool that can help beginners get a head start in QCA layout design. It discusses research on the design of circuits in quantum-dot cellular automata (QCA) with the objectives of obtaining low-complexity, robust designs for various arithmetic operations. The book also investigates the systematic reduction of majority logic in the realization of multi-bit adders, dividers, ALUs, and memory.