1.
Record Nr.	UNINA9910254218603321
Autore	Abdessaied Nabila
Titolo	Reversible and Quantum Circuits : Optimization and Complexity Analysis / / by Nabila Abdessaied, Rolf Drechsler
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2016
ISBN	3-319-31937-X
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (XXII, 186 p. 105 illus., 3 illus. in color.)
Disciplina	621.3815
Soggetti	Electronic circuits
	Microprocessors
	Electronics
	Microelectronics
	Circuits and Systems
	Processor Architectures
	Electronics and Microelectronics, Instrumentation
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Chapter 1 Introduction -- Chapter 2 Background -- Chapter 3 Optimizations and Complexity Analysis on the Reversible Level -- Chapter 4 Optimization and Complexity Analysis on the Mapping Level -- Chapter 5 Optimizations and Complexity Analysis on the Quantum Level -- Chapter 6 Conclusions.
Sommario/riassunto	This book presents a new optimization flow for quantum circuits realization. At the reversible level, optimization algorithms are presented to reduce the quantum cost. Then, new mapping approaches to decompose reversible circuits to quantum circuits using different quantum libraries are described. Finally, optimization techniques to reduce the quantum cost or the delay are applied to the resulting quantum circuits. Furthermore, this book studies the complexity of reversible circuits and quantum circuits from a theoretical perspective.