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Descrizione fisica	1 online resource (216 p.)
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front Cover; Preface; Contents; Chapter 1: General Introduction; Chapter 2: Mathematical Models and Design Specifications in Synthetic Gene Networks; Chapter 3: Robust Synthetic Biology Designs based on System Dynamic Models; Chapter 4: Robust Synthetic Biology Designs based on Network Evolutionary Methods; Chapter 5: Construction of Promoter and Promoter-RBS Libraries for Synthesis of Gene Networks; Chapter 6: Robust Synthetic Gene Network Designs based on Library-search Method; Chapter 7: Robust Design of Synthetic Biological Filter and Transistor based on Promoter-RBS Libraries Chapter 8: Communication and Synchronization of a Population of Coupled Synthetic Gene NetworksColor Plate Section; Back Cover
Sommario/riassunto	This book develops a rational design and systematic approach to construct a gene network with desired behaviors. In order to achieve this goal, the registry of standard biological parts and experimental techniques are introduced at first. Then these biological components are characterized by a standard modeling method and collected in the component libraries, which can be efficiently reused in engineering synthetic gene networks. Based on the system theory, some design

specifications are provided to engineer the synthetic gene networks to robustly track the desired trajectory by employing t