

1. Record Nr.	UNINA9910139055903321
Titolo	Growing up in Adelaide in the 1950's [[electronic resource] /] / edited by Susan Blackburn
Pubbl/distr/stampa	Brookvale, NSW, : Hale & Iremonger, 2012
ISBN	0-86806-929-9
Descrizione fisica	291 p
Altri autori (Persone)	BlackburnSusan <1947->
Soggetti	Nineteen fifties Electronic books. Adelaide (S. Aust.) Biography Adelaide (S. Aust.) Social life and customs 20th century
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph

2. Record Nr.	UNINA9911026042403321
Autore	Moreno Ivan
Titolo	Introduction to Metalens Optics
Pubbl/distr/stampa	Bristol : , : Institute of Physics Publishing, , 2024 ©2024
ISBN	9780750357845 9780750357852
Edizione	[1st ed.]
Descrizione fisica	1 online resource (91 pages)
Collana	IOP Series in Emerging Technologies in Optics and Photonics Series
Disciplina	681.423
Soggetti	Metasurfaces Optics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Acknowledgements -- Author biography -- Ivan Moreno -- Abbreviations -- Symbols -- Chapter Introduction -- 1.1 Historical background -- 1.2 Some recent advances -- 1.2.1 Large FOV metalens -- 1.2.2 Tunable metalenses -- 1.2.3 Outdoor imaging -- 1.2.4 Metalens microscopes -- 1.2.5 Other applications -- 1.2.6 Across the electromagnetic spectrum -- 1.3 Motivations -- 1.4 Features and potential advantages of metalenses -- 1.4.1 Subwavelength wavefront control -- 1.4.2 Reduced thickness and binary structure -- 1.4.3 CMOS fabrication compatibility -- 1.4.4 Tunability -- 1.4.5 Polarization selectivity -- 1.4.6 High-numerical aperture capability -- 1.4.7 Multifunctional capability -- Bibliography -- Chapter Basics of metalens optics -- 2.1 Optics of metasurfaces -- 2.1.1 The law of refraction-reflection for metasurfaces -- 2.1.2 Derivation of the refraction law from Huygens's principle -- 2.1.3 The 3D law of refraction-reflection for metasurfaces -- 2.1.4 The 3D vector form of refraction-reflection law -- 2.2 Metalens phase profile -- 2.2.1 Derivation of the metalens phase profile from the refraction law -- 2.2.2 Phase profile derivation from geometry and the Huygens's principle -- 2.2.3 About the gradient of phase profile -- 2.2.4 From phase profile to metasurface profile -- 2.3 Relationship with the classical lens -- 2.4 Meta-atoms -- 2.5 Lens equation -- 2.6 Ray-

tracing -- Problems -- Bibliography -- Chapter Simulation tools -- 3.1 Finite-difference time-domain (FDTD) -- 3.1.1 Two-dimensional FDTD approach -- 3.1.2 Three-dimensional FDTD approach -- 3.1.3 Space and time step conditions -- 3.2 Rigorous coupled-wave analysis (RCWA) -- 3.3 Simulation softwares -- 3.4 Problems -- Bibliography -- Chapter Optics of meta-atoms -- 4.1 Principles of phase shift -- 4.2 Metallic meta-atoms -- 4.3 Dielectric meta-atoms -- 4.3.1 Propagation phase. 4.3.2 Resonant phase -- 4.3.3 Geometric phase -- 4.4 Meta-atom materials -- 4.5 Problems -- Bibliography -- Chapter Optical design of metalenses -- 5.1 Basic design process -- 5.2 Numerical aperture (NA) -- 5.3 Metalens phase profiles -- 5.4 Array of meta-atoms -- 5.4.1 Array geometries -- 5.4.2 Numerical aperture limit -- 5.4.3 Unit cell -- 5.5 Chromatic aberrations -- 5.6 Focusing efficiency -- 5.7 Problems -- Bibliography.

Sommario/riassunto

This book provides an overview of the basic optics of the metalens, providing an introduction for students, scientists and engineers. The scope of this book is to introduce the optical fundamentals and basic optical design methods of a metalens, where light propagation can be modelled by simple, and yet useful basic optics (e.g., the refraction law of metasurfaces, the wave front propagation, the metasurface phase profile, meta-atoms, etc.).
