

1. Record Nr.	UNISA996490351303316
Autore	Kan Yinhui
Titolo	Metamaterials for manipulation of thermal radiation and photoluminescence in near and far fields // Yinhui Kan
Pubbl/distr/stampa	Singapore : , : Springer, , [2022] ©2022
ISBN	9789811961281 9789811961274
Descrizione fisica	1 online resource (131 pages)
Collana	Springer Theses
Disciplina	536.33
Soggetti	Heat - Radiation and absorption Photoluminescence
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Supervisor's Foreword -- Abstract -- Acknowledgements -- Contents -- Symbols -- Variables -- Greek Symbols -- Subscripts/Superscripts -- Abbreviations -- 1 Introduction -- 1.1 Metamaterials: Light-Matter Interaction at Subwavelength Scales -- 1.2 Tailoring Thermal Radiative Properties by Metamaterials -- 1.3 Near-Field Radiative Heat Transfer Between Nanostructures -- 1.4 On-Chip Manipulation of Spontaneous Emission -- 1.5 Research Outline -- References -- 2 Theoretical and Experimental Methods -- 2.1 Calculation Methods -- 2.1.1 Layer Structures: Transfer Matrix Method -- 2.1.2 Grating Structures: Rigorous-Coupled Wave Analysis -- 2.1.3 NFRHT in Three-Body Systems -- 2.2 Physical Effects or Phenomena for Designing Nanodevices -- 2.2.1 Surface Plasmons -- 2.2.2 Spontaneous Emission Near Nano Antennas -- 2.2.3 Spin-Orbit Interactions of Light -- 2.3 Sample Fabrications -- 2.4 Experimental Characterization -- 2.5 Summary -- References -- 3 Design of Broadband Metamaterial Absorbers in Visible and Infrared Frequencies -- 3.1 Active Designing Method for One-Dimensional Periodic Structures -- 3.2 Near-Perfect Broadband Absorption -- 3.3 Two-Dimensional Gratings with Anisotropic Materials -- 3.4 Resonance Absorption by Hyperbolic Polaritons -- 3.5 Summary -- References -- 4 Enhancement and Modulation of Near-Field Thermal Radiation -- 4.1

Near-Field Radiative Heat Transfer in Three-Body Systems with Periodic Structures -- 4.2 Enhancement of Near-Field Thermal Radiation -- 4.3 Near Field Radiative Heat Transfer with Graphene/hBN Heterostructures -- 4.4 Active Modulation of Heat Transfer by a Modulator -- 4.5 Summary -- References -- 5 Metasurfaces-Enabled Manipulation of Spontaneous Photon Emission -- 5.1 Scattering Light from QEs and Nano Bricks Interacting Systems -- 5.2 Spinning Single Photons -- 5.3 Directional Off-Normal Photon Streaming. 5.4 Summary -- References -- 6 On-Chip Control Excitations of Quantum Emitters in Hybrid Nanocircuits -- 6.1 Spin-Orbit Coupler in Visible Frequency -- 6.2 Selective Excitations of Quantum Emitters -- 6.3 Summary -- References -- 7 Summary and Outlook -- Appendix A Characterizations of Hybrid QE-Coupled Metasurfaces -- A.1 Measurement of Stokes Parameters -- A.2 Lifetime Measurement.
