

1. Record Nr.	UNINA9911020251003321
Autore	Wang Qiang
Titolo	Two-Dimensional Materials for Nonlinear Optics : Fundamentals, Preparation Methods, and Applications
Pubbl/distr/stampa	Newark : , : John Wiley & Sons, Incorporated, , 2023 ©2024
ISBN	9783527838264 3527838260 9783527838288 3527838287
Edizione	[1st ed.]
Descrizione fisica	1 online resource (367 pages)
Altri autori (Persone)	ZhangHao-Li
Disciplina	621.3694
Soggetti	Two-dimensional materials Nonlinear optics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Cover -- Title Page -- Copyright -- Contents -- Preface -- List of Abbreviations -- Chapter 1 Preparation of 2D Materials -- 1.1 Mechanical Exfoliation of 2D Materials -- 1.2 LiquidPhase Exfoliation of 2D Materials -- 1.3 Chemical Vapor Deposition Growth of 2D Materials -- 1.4 CVD Growth of WaferScale Single Crystal 2D Materials -- 1.5 Thickness Control in CVD Growth of 2D Materials -- 1.6 Phase Control in CVD Growth of 2D Materials -- 1.7 Summary and Prospect -- References -- Chapter 2 An Introduction to the Nonlinear Optical Properties of 2D Materials -- 2.1 Introduction -- 2.2 Nonlinear Optics of 2D Materials -- 2.2.1 SHG, THG, and HHG Setups -- 2.2.2 FourWave Mixing -- 2.2.3 ZScan Techniques -- 2.2.4 Nonlinear Optical Imaging -- 2.2.5 Pump–Probe Techniques -- 2.3 Application of 2D Nonlinear Materials -- 2.3.1 Optical Limiting -- 2.3.2 QSwitched and ModeLocked Lasers -- 2.3.3 Optical Switch and Modulation -- 2.3.4 Other Nonlinear Optical Phenomena -- 2.4 Prospect -- 2.4.1 Precise Fabrication and Functionalization of 2D Materials
Sommario/riassunto	This book delves into the fundamentals, preparation methods, and

applications of nonlinear optical materials, specifically focusing on two-dimensional (2D) materials. It covers a wide range of topics including the preparation of these materials, their unique nonlinear optical properties, and advanced techniques for characterizing them. The book also explores various applications in fields such as ultrafast spectroscopy, optical imaging, and space technologies. It is intended for researchers, engineers, and graduate students in the fields of materials science, optics, and nanotechnology.
