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Titolo	Terahertz Wave Detection and Imaging with a Hot Rydberg Vapour // by Christopher G. Wade
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Descrizione fisica	1 online resource (XIII, 91 p. 41 illus., 30 illus. in color.)
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Disciplina	539
Soggetti	Atomic structure Molecular structure Quantum theory Spectrum analysis Microscopy Atomic/Molecular Structure and Spectra Quantum Physics Spectroscopy and Microscopy
Lingua di pubblicazione	Inglese
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Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Introduction -- Atomic Structure and Atom-light Interactions -- Experimental Methods -- Probing an Excited State Transition Using Quantum Beats -- Intrinsic Rydberg Optical Bistability.-Terahertz Electrometry with Rydberg EIT -- Real-time Near-eld Terahertz Field Imaging.-Terahertz-driven Phase Transition in a Hot Rydberg Vapour -- Summary and Outlook.
Sommario/riassunto	This book details groundbreaking experiments for the sensing and imaging of terahertz-frequency electromagnetic radiation (THz) using Rydberg atoms. The major advances described include the development and implementation of a new technique for THz imaging using atomic fluorescence; the demonstration of a THz-driven phase transition in room-temperature atomic vapour; and a novel method for probing the excited-state dynamics of atoms using quantum beats. The work has formed the basis for several articles published in journals including

Nature Photonics and the Physical Review, and has sparked industry interest, becoming the subject of ongoing collaborative research and development. This exceptionally well-written book provides a definitive account of terahertz sensing with Rydberg atoms.
