Record Nr. UNINA9910634051703321 Solid-State Mid-Infrared Laser Sources / / edited by Irina T. Sorokina, **Titolo** Konstantin L. Vodopyanov Pubbl/distr/stampa Berlin, Heidelberg:,: Springer Berlin Heidelberg:,: Imprint: Springer, 2003 **ISBN** 3-540-36491-9 Edizione [1st ed. 2003.] Descrizione fisica 1 online resource (XVI, 557 p.) Collana Topics in Applied Physics, , 0303-4216;; 89 Disciplina 621.36/61 Soggetti Lasers **Photonics** Solid state physics Spectroscopy Microscopy Engineering Optics, Lasers, Photonics, Optical Devices Solid State Physics Spectroscopy and Microscopy Engineering, general Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Bibliographic Level Mode of Issuance: Monograph Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Mid-Infrared 2—5 ?m Heterojunction Laser Diodes -- High Performance Quantum Cascade Lasers and Their Applications -- Mid-IR Difference Frequency Generation -- Pulsed Mid-IR Optical Parametric Oscillators -- Mid-Infrared Ultrafast and Continuous- Wave Optical Parametric Oscillators -- Mid-Infrared Fiber Lasers -- Crystalline Mid-Infrared Lasers -- Crystalline and Fiber Raman Lasers -- Narrow-Linewidth Tunable Terahertz-Wave Sources Using Nonlinear Optics -- Mid-Infrared and THz Coherent Sources Using Semiconductor-Based Materials -- Mid-Infrared Laser Applications in Spectroscopy -- Mid-IR Laser Applications in Medicine.

The book describes the most advanced techniques for generating coherent light in the mid-infrared region of the spectrum. These techniques represent diverse areas of photonics and include

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heterojunction semiconductor lasers, quantum cascade lasers, tunable crystalline lasers, fiber lasers, Raman lasers, and optical parametric laser sources. Offering authoritative reviews by internationally recognized experts, the book provides a wealth of information on the essential principles and methods of the generation of coherent midinfrared light and on some of its applications. The instructive nature of the book makes it an excellent text for physicists and practicing engineers who want to use mid-infrared laser sources in spectroscopy, medicine, remote sensing and other fields, and for researchers in various disciplines requiring a broad introduction to the subject.