DESCRIPTION

An important guide to the principles and applications of the laser-based mid-infrared region of the spectrum

*Laser-based Mid-infrared Sources and Applications* offers a guide to the most advanced techniques for generating coherent light in the mid-infrared region of the spectrum. The book explains a range of approaches for generating coherent light in the mid-infrared range such as solid-state lasers, fiber lasers, semiconductor lasers and nonlinear optics. The book also reviews the most important applications of the technology including spectral recognition of molecules and trace gas sensing, medical and military applications, as well as high-field physics and attoscience.

The book covers diverse areas of laser photonics such as ion-doped solid-state lasers, fiber lasers, semiconductor lasers including: intra- and intersubband cascade lasers, and laser sources based on nonlinear optical frequency conversion. Each chapter starts with the fundamentals for a given technique, that enables self-directed study and the myriad references help conduct deeper research. This important book:

- Examines the fundamental principles, advanced techniques, and recent applications
- Discusses important military and biomedical applications
- Explores Mid-Infrared sources that are currently the subject of intense research
Written for students, academics, researchers, and engineers in various disciplines, *Laser-based Mid-infrared Sources and Applications* offers a review of the contemporary techniques for generating coherent light in the important mid-infrared spectral region with an emphasis on the achievements made over the last two decades.

### ABOUT THE AUTHOR

**Konstantin L. Vodopyanov**, is the 21st Century Scholar Endowed Chair and Professor of Optics and Physics at CREOL, the College of Optics and Photonics at the University of Central Florida. He is a world expert in mid-IR lasers, laser-matter interactions, nonlinear optics, and laser spectroscopy.

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