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| Soggetti | Nuclear energy Atoms Physics Plasma (Ionized gases) Lasers Photonics Optical materials Electronic materials Nuclear Energy Atoms and Molecules in Strong Fields, Laser Matter Interaction Plasma Physics Optics, Lasers, Photonics, Optical Devices Optical and Electronic Materials |
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pumped Gas NPLs -- Basic Parameters of Nuclear-excited Plasma -- Lasing Mechanisms and Kinetic Models of NPLs -- Nuclear-pumped Laser Devices Based on Gas Media -- Energy Deposition in Gas NPL Active Media -- Optical Inhomogeneities in Sealed NPLs -- Specific Features of NPLs with a Flowing Gas Medium -- Design Concepts for Stationary Reactor Lasers -- Studies of Condensed-media NPLs -- Gas Lasers Excited by Radiation from Nuclear Explosions -- Comments About Nuclear-Pumped Laser Research in the United States.

Sommario/riassunto

This book covers the history of lasers with nuclear pumping (Nuclear Pumped Lasers, NPLs). This book showcases the most important results and stages of NPL development in The Russian Federal Nuclear Center (VNIIEF) as well as other Russian and international laboratories, including laboratories in the United States. The basic science and technology behind NPLs along with potential applications are covered throughout the book. As such, this book:

- Contains a historical overview of the extensive information developed over the past 40 years of work on NPLs
- Covers the most important results and stages of NPL development, not just in the Russian Federal Nuclear Center, VNIIEF, but also in other laboratories in Russia, the United States, and some other scattered international laboratories
- Systematizes the fragmented information accumulated over these years of very active research and development

As the first comprehensive discussion of NPLs, students, researchers, and application engineers interested in high energy lasers will find this book an extremely valuable source of information about these unique lasers.
