

# Ultrafast Laser Diode Models





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# Ultrafast Diode Lasers: Fundamentals and Applications

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PDF , On Jan 1, 1995, Peter Vasil'ev published Ultrafast Diode Lasers: Fundamentals and Applications , Find, read and cite all the research you need on

## Recent developments in compact ultrafast lasers

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Ultrafast lasers, which generate optical pulses in the picosecond and femtosecond range, have progressed over the past decade from complicated and specialized laboratory systems to compact,



## **Recent advances in ultrafast semiconductor disk lasers**

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The performance of ultrafast semiconductor disk lasers has rapidly advanced in recent decades. The strong interest from industry for inexpensive, compact, and reliable ultrafast laser

## **Laser Diode Drive Circuit Design Method and Spice Model**

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ROHM offers laser diodes (LDs) for Light Detection and Ranging (LiDAR). This application note will introduce ROHM's LD line-up and show how to design the drive circuits of ROHM LDs.

## **JPT Ultrafast Lasers-JPT Laser**

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JPT provides ultrafast lasers (picosecond and femtosecond) with ultra-short pulses, high



peak power, and superior precision. Widely used in micromachining, semiconductors, medical, and scientific

## Ultrafast laser manufacturing: from physics to industrial applications

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Modern ultrafast lasers are enabling better operative performances in micro and nano-fabrications of materials, benefited from their ease of use, robustness, and reliability. The purpose of

## Semiconductor Saturable Absorber Mirrors (sesam~s) For

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(Invited Paper) Abstract--Intracavity semiconductor saturable absorber mirrors (SESAM's) offer unique and exciting possibilities for passively pulsed solid-state laser systems, extending from -switched



## Microsoft Word

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A) Ultrafast diode-pumped lasers: We have made key contributions to frontiers in the performance of ultrafast lasers and their improvement through her contribution to the understanding of Kerr lens

## Ultrafast lasers for attosecond science

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The three-step model predicts how the parameters of a continuous wave laser field-- its wavelength and intensity--will affect the generated high harmonics given the temporal periodicity of

## Ultrafast Lasers - ultrashort pulses, mode-locked laser,

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Ultrafast lasers are lasers emitting ultrashort pulses, i.e., pulses with picosecond or even femtosecond durations. Different types can be operated in that regime.

## 2.1 Ultrafast solid-state lasers

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The emphasis of this chapter is to give an updated review of the progress in ultrafast solid-state lasers since 1990 when mode-locking became a hot topic again and the era of ultrafast dye lasers has

## Best Laser Hair Removal Devices of 2026

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Comprehensive comparison of 2026's top 5 laser hair removal devices. We analyze performance, features, and value to help you choose the



# Ultrafast Lasers: A Comprehensive Introduction to

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This book gives graduate students a comprehensive introduction to ultrafast lasers and is authored by a world-leading authority.

## What is a Laser Diode Driver?

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A Laser Diode Driver (LDD) is a circuit or device that provides a steady and controlled current to a laser diode. It ensures a stable, precise, and low-noise current supply, optimizing laser

## Recent Advances in Applications of Ultrafast Lasers

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This review first traces the progression from early ruby lasers to modern titanium-sapphire lasers, highlighting breakthroughs like Kerr-lens mode



## Ultrafast spin-lasers

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Room-temperature modulation frequencies exceeding 200 GHz are demonstrated in birefringent semiconductor spin-lasers by coupling the spin

## SPIE Photonics West 2026

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SPIE Photonics West is the world's largest optics and photonics technologies event. Present your research in biomedical optics, biophotonics,

## Laser diode

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The laser diode chip removed and placed on the eye of a needle for scale. A laser diode with the case cut away. The laser diode chip is the small black chip at the



## **Recent Advances in Applications of Ultrafast Lasers**

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Ultrafast lasers, characterized by femtosecond and picosecond pulse durations, have revolutionized material processing due to their high energy

### **Ultrafast laser manufacturing: from physics to industrial applications**

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The paper introduces main phenomena in ultrafast laser-matter interactions by reviewing relevant theoretical models and simulation techniques. The operation of ultrafast lasers is based on

## **ULTRAFAST LASERS**

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By 2022, ultrafast laser systems with average output powers in the 10 kW range will be implemented for applications in industry and research. For this purpose, laser sources will be developed that exceed

## **Revealing the behavior of soliton buildup in a mode-locked laser**

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Compared with the extinction process of mode-locked fiber lasers , solid-state lasers have a longer relaxation oscillation time before the laser disappears, which is due to the higher pump

## **Fast/Ultra-Fast Rectifiers**

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Our Fast/Ultra-Fast Rectifiers deliver extremely swift rectification and recovery times, and are typically constructed with Diodes' Glass Passivation Process (GPP), providing high efficiency to a wide variety



## **ALPHALAS**

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## **Optics Design and Diode Lasers**

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By means of various measuring and testing procedures, we investigate assembled high-performance diode laser bars on their electro-optical properties and identify how the structural design engineering

## **ALPHALAS**

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New models of ultrafast photodiodes have been released by ALPHALAS GmbH. The new photodetectors expand the product range towards faster rise times as short as 15 ps and wider

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