

1. Acousto-optic actively mode-locked frequency-doubled continuous-wave Nd:YAG laser

Bai, Jintao ; Qiao, Xueguang ; Wang, Shuicai

Source: *Journal of Applied Physics*, v 75, n 2, p 734-736, Jan 15 1994; **ISSN:** 00218979; **DOI:** 10.1063/1.356473

Database: Compendex

Data Provider: Engineering Village

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2. Study of strength and toughness of over-heated HAZ in medium carbon quenched and tempered steel

Gao, Huilin (1)

Source: *Hanjie Xuebao/Transactions of the China Welding Institution*, v 15, n 2, p 107-112, Jun 1994; **Language:**

Chinese; **ISSN:** 0253360X

Author affiliation: (1) Xi'an Petroleum Inst, Xi'an, China

Abstract: The strength and toughness of over-heated HAZ of 35CrMo quenched and tempered steel can be improved after double-phase zone (DPZ) treatment. The toughness of over-heating HAZ is optimal when quenching temperature corresponds to the high temperature zone of DPZ. In this paper, the mechanism of strength and toughness improvement was discussed in three aspects, i.e., microstructure of over-heated HAZ, morphology of undissolved ferrite and temper brittleness. (5 refs)

Main heading: Welding

Controlled terms: Carbon steel - Heat affected zone - Quenching - Strengthening (metal) - Tempering

Uncontrolled terms: Carbon steel welding - Welding over heat zone

Classification Code: 537.1 Heat Treatment Processes - 538.2 Welding

Treatment: Experimental (EXP)

Database: Compendex

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3. Acousto-optic actively mode-locked frequency-doubled continuous-wave Nd:YAG laser

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Abstract: This paper describes a stable synchronous pumping source for fs dye lasers at 0.53 μm based on a high average power acoustooptically active mode-locked frequency-doubled cw Nd:YAG laser system, which can provide a fundamental power of upto 30 W at 4.0 kW total lamp input without any acoustooptic modulator or KTiOPO₄ crystal in the cavity. At net rf drive powers of 1.5 W, cw mode-locked pulses output power of 20 W was obtained at a repetition rate of 200 MHz with pulse duration of 100 ps. Effects of inserting a KTP and QWP inside the cavity are described. (9 refs)

Main heading: Continuous wave lasers

Controlled terms: Acoustooptical effects - Laser optics - Optical materials - Pumping (laser)

Uncontrolled terms: Frequency doubled lasers - Mode locked lasers - Potassium titanate phosphates - Second harmonic light output power

Classification Code: 741.1 Light/Optics - 741.3 Optical Devices and Systems - 744.6 Lasers Other Than Gas, Liquid, Solid State or Semiconductor - 751.2 Acoustic Properties of Materials

Treatment: Applications (APP) - Experimental (EXP)

Database: Compendex

Data Provider: Engineering Village

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4. Acousto-optic actively mode-locked frequency-doubled continuous-wave Nd:YAG laser

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Author affiliation: (1) Xi'an Petroleum Institute, Xi'an 710061, China (2) Xi'an Institute of Optics and Precision Mechanics, Academia Sinica, Xi'an 710069, China

Abstract: This paper describes a stable synchronous pumping source for fs dye lasers at 0.53 μm based on a high average power acoustooptically active mode-locked frequency-doubled cw Nd:YAG laser system, which can provide a fundamental power of upto 30 W at 4.0 kW total lamp input without any acoustooptic modulator or KTiOPO₄ crystal in

the cavity. At net rf drive powers of 1.5 W, cw mode-locked pulses output power of 20 W was obtained at a repetition rate of 200 MHz with pulse duration of 100 ps. Effects of inserting a KTP and QWP inside the cavity are described.

Main heading: Continuous wave lasers

Controlled terms: Acoustooptical effects - Pumping (laser) - Optical materials - Laser optics

Uncontrolled terms: Mode locked lasers - Frequency doubled lasers - Potassium titanate phosphates - Second harmonic light output power

Classification Code: 744.6 Lasers Other Than Gas, Liquid, Solid State or Semiconductor - 751.2 - 741.1 - 741.3

Treatment: Experimental (EXP) - Applications (APP)

Database: Compendex

Data Provider: Engineering Village

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