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CB-P.29 MON

Dual-Wavelength Y-Branch DBR-RW Diode Laser at 785 nm with Adjustable Spectral Distance from 0 up to 1.6 nm

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We demonstrate a dual-wavelength diode laser at 785 nm with individual control of the two emission wavelengths. The laser source is suitable for different spectroscopic applications and the generation of THz radiation.

CB-P.30 MON

Performance Optimization of InGaN Based Quantum Well Structures For Chemical Sensing

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In this paper, we investigate performance optimization of optically pumped InGaN based quantum well (QW) structures with purely optical read-out for chemical sensing applications. TCAD simulations estimates a better spectral shift at higher doping level.

CB-P.31 MON

Multi-frequency Diode Laser For Pumping CPT Resonances

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A method of obtaining multi-frequency optical radiation for pumping CPT resonances with microwave and RF modulation of the pump current of a diode laser is proposed and implemented.

CB-P.32 MON

Influence of spacer thickness on the optical properties of vertically stacked InP/AlGaInP quantum dot lasers at the short wavelength

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The optical properties of the double vertically stacked InP/AlGaInP quantum dot laser at the short emitting wavelength of 660 nm are investigated by changing the spacer thickness between the quantum dot layers.

CB-P.33 MON

Characteristics of QD-LD with InP(311)B Substrate on Thickness of InGaAlAs Spacer Layers

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In this paper, we experimentally evaluated the laser characteristics by fabricating QD-LDs with changing thickness of spacer layer of QDs for optimizing the structure and investigating the influence of the thickness dependency.

CB-P.34 MON

Superluminescent diodes based on asymmetric double quantum-well heterostructures.

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It is shown experimentally that superluminescent diodes (SLDs) based on asymmetric double quantum-well heterostructures with ultrathin active layers have significant advantages over widely used SLDs based on a single quantum-well heterostructures.

CB-P.35 MON

Tapered Multi Section Superluminescent Diode with Tunable Spectral Asymmetry Between Narrow and Wide Facet Outputs

•A.F. Forrest[1,2], M. Krakowski[3], P. Bardella[4], and M.A. Cataluna[1,2]; [1]Institute of Photonics and Quantum Sciences, School of Engineering and Physical Sciences, Heriot-Watt University, Edinburgh, United Kingdom; [2]Previously also with the School of Science and Engineering, University of Dundee, Dundee, United Kingdom; [3]III-V Lab, Palaiseau, France; [4]Dipartimento di Elettronica e Telecomunicazioni, Politecnico di Torino, Turin, Italy

Optical spectra from both facets of a tapered two section quantum-dot superluminescent diode were compared and found to have a tunable asymmetry, opening a potential new degree of freedom in bandwidth engineering via single device multiplexing.

CB-P.36 MON

Annealing influence on structural and luminescencent properties of ZnSe:Fe

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We report the enhancement of mid-IR cathodoluminescence and edge photoluminescence after annealing. The influence of annealing process on structural and luminescent characteristics of ZnSe:Fe are discussed. Assumption about the nature of luminescence enhancement is formulated.

CB-P.37 MON

Optoelectronic Devices based on ZnO/ZnMgO

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We present the investiagtion of Zn(Mg)O-bassed resonant tunneling diode structures including their growth, fabrication and characterization. This work is a prerequisite for ZnO-based THz quantum cascade lasers and detectors.

CB-P.38 MON

Resonant intersubband polariton-LO phonon scattering in an optically pumped polaritonic device

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We report experimental evidence of LO phonon-intersubband polariton scattering processes under resonant injection of light within two different semiconductor systems. The demonstrated scattering process is resonant with both the initial and final polaritonic states

CB-P.39 MON

Turn-on timescale quenching in two state quantum well lasers

V. Dudelev[1], V. Mylnikov[1], A. Shkol'nik[2], K. Soboleva[3], V. Kuchinskii[1], D.A. Livshits[2], •G. Sokolovskii[1], and E. Viktorov[4]; [1]Ioffe Institute, Saint-Petersburg, Russia; [2]Innolume GmbH, Dortmund, Germany; [3]Peter the Great St. Petersburg Polytechnic University, Saint-Petersburg, Russia; [4]ITMO University, Saint-Petersburg, Russia

We find that in a pulse pumped quantum well laser the timescale of exponential growth at the ground state laser turn-on noticeably quenches when the laser turns on at the excited state wavelength.

CB-P.40 MON

Generation of sub-nanosecond 586-nm optical pulses based on the synchronously gain-switched laser diodes with optical injection locking

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We developed a novel light source based on an advanced gain-switching operation of laser diodes. 586-nm nanosecond optical pulses were obtained by sum frequency generation of amplified laser pulses.

CB-P.41 MON

Experimental and theoretical evidences of hysteresis in passive mode-locked Quantum Dots lasers

•L. Columbo[1], P. Bardella[1], D. Auth[2], C. Weber [2], and S. Breuer[2]; [1]Dipartimento di Elettronica e Telecomunicazioni, Politecnico di Torino, Torino, Italy; [2]Institute of Applied Physics, Technische Universität Darmstadt, Darmstadt, Germany

We experimentally and numerically study the bistability between pulsed solutions and laser "off" state in a two sections InAs/InGaAs QD tapered sources in regime of passive mode-locking.

CB-P.42 MON

Self-injected optical frequency comb quantum dash lasers

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Mode-spacing control of self-mode-locked single-section InAs/InGaAsP quantum-dash lasers emitting optical frequency combs around 1550 nm is experimentally reported and confirmed by a stochastic time-domain model. Feedback-strength-boundaries for multiple feedback-cavity-lengths yielding full-delay tuning are identified.

CB-P.43 MON

Passively mode-locked quantum-well semiconductor laser subject to ultra-short optical self-feedback with nanometric fine-delay

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Wavelength-periodic dependencies of repetition rate, emission wavelength and average optical output power of an InGaAs double-quantum-well passively mode-locked semiconductor laser at 1070 nm on sub-wavelength scale controlled fine-delay from short-cavity optical feedback are reported experimentally.