Abstracts

Generation of Subpicosecond Optical Pulses by Mode-Locking Semiconductor Lasers with Millimeter-Wave Sources

Y.K. Chen, M.C. Wu, T. Tanbun-Ek, R.A. Logan and M.A. Chin. "Generation of Subpicosecond Optical Pulses by Mode-Locking Semiconductor Lasers with Millimeter-Wave Sources." 1991 MTT-S International Microwave Symposium Digest 91.2 (1991 Vol. II [MWSYM]): 503-505.

Subpicosecond transform-limited optical pulses are generated from monolithic colliding pulse mode-locked multiple quantum well lasers at 1.5-um wavelength. The 0.95 ps optical pulses are synchronized with a millimeter-wave oscillator up to 40 GHz and have a modulation depth greater than 95%. Using a passive mode-locking technique, 610 femtosecond optical pulses are also generated at a repetition rate as high as 350 GHz without any synchronization sources. This is the highest pulse repetition rate ever reported by semiconductor optoelectronic sources.

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