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| **Abstract:** |  |
| Laser diode capable of high speed direct modulation is one of the key solution for short distance applications due to their low power consumption, low cost and small size features. Realization of high modulation bandwidth for direct modulated laser maintaining the above mentioned feature is needed to enhance the short distance, low cost data transmission. One promising approach to enhance the modulation speed is to increase the photon density to achieve high modulation bandwidth. So to achieve this target, 1.55 μm InGaAsP/InGaAsP multiple quantum well (MQW) asymmetric active multimode interferometer laser diode (active MMI-LD) has been demonstrated [1]. The split pumping concept has been applied for the active MMI-LD and significant enhancement of electrical to optical 3 dB down frequency bandwidth (f3dB) up to 8 GHz has been successfully confirmed. The reported high bandwidth for split pump active MMI-LD is around 3.5 times higher than the previously reported maximum 3 dB bandwidth (2.3 GHz) of active MMI-LD without split pumping section. That shows, the splitted multimode pumping section behind the electrically isolated modulation section can potentially improve the modulation bandwidth of active MMI-LD. Clear and open eye diagram had also been confirmed for 2.5 Gbps, (27-1) pseudo random bit sequence (PRBS) modulation. | |