

Abstract Submitted
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Recovery and switching missing longitudinal modes in a semiconductor laser¹ TSU-CHIANG YEN, Department of Physics, National Sun Yat-sen University, Kaohsiung, Taiwan 804, R.O.C., DA-LONG CHENG, JUN-JUH YAN, Department of Computer and Communication, SHU-TE University, Kaohsiung, Taiwan 824, R.O.C. — This investigation, for the first time, recovered and maintained a stable oscillation of every missing longitudinal mode in a hysteresis type mode-hopping gap of a Fabry-Perot semiconductor laser. The experimental method was to feedback the laser's beam with a polarization orthogonal to the laser's output polarization. An application of this technology was demonstrated, in which the laser's wavelength was switched among recovered modes with a speed that potentially could be up to several hundreds of megahertz. A special feature of this method is that both the laser power and spectral purity are preserved during mode recovery and mode switching.

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