

Abstract Submitted
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Polarization switching enhanced by optical feedback in polarization-mode hopping VCSEL¹ DA-LONG CHENG, Department of Computer and Communication, SHU-TE University, Kaohsiung, Taiwan 824, R.O.C., TSU-CHIANG YEN, WEI CHANG, Department of Physics, National Sun Yat sen University, Kaohsiung, Taiwan 804, R.O.C. — Polarization mode hopping (PMH) is characterized by a stochastic exchange of power between two polarization states of vertical-cavity surface-emitting laser (VCSEL). This investigation presents an experimental study of the current driven polarization switching (PS) properties of the PMH VCSEL with polarization-selective optical feedback (PSOF). Experimental results indicate that PMH noise could be suppressed by the PSOF while the VCSEL subjected to current modulation at a rate of 50 MHz. The signal to noise ratio (SNR) of the PS increased above 30 dB by the PSOF. These results can be used to greatly improve the performance of the PS in data transmission.

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