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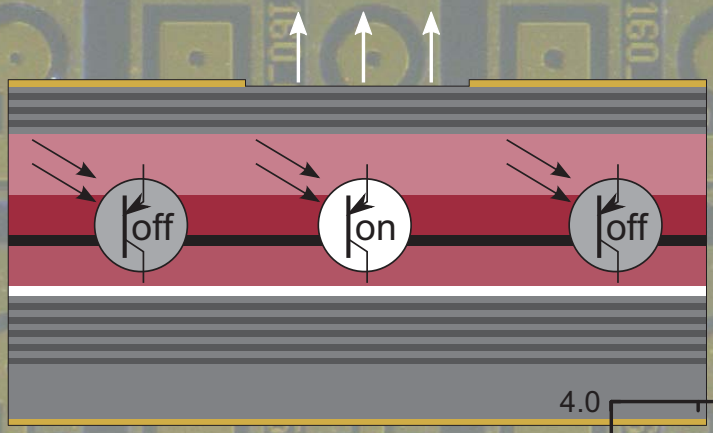

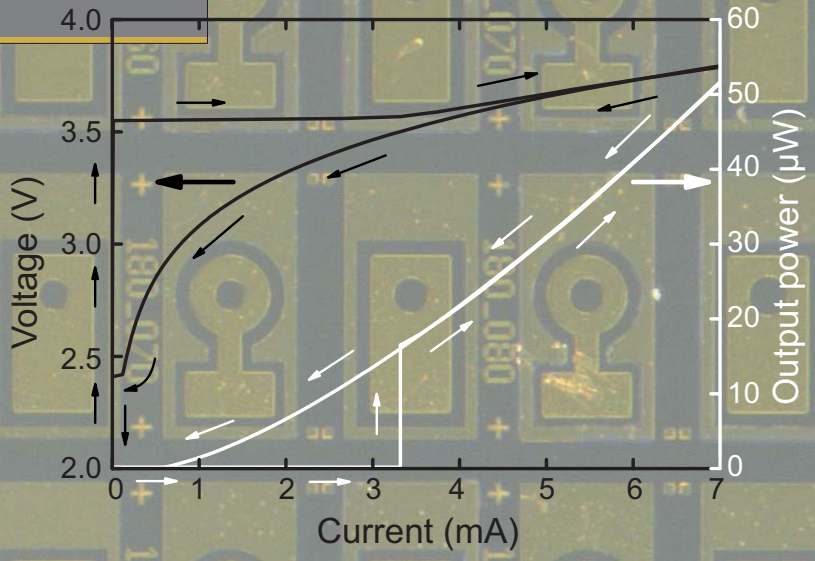

Annual Report 2015

Institute of Optoelectronics

Cover photo:
Novel oxide-free vertical-cavity surface-emitting lasers (VCSELs) with monolithically integrated phototransistor (PT) for optically self-controlled current confinement. As indicated in the schematic, the PT region is conductive where the laser mode establishes. Areas unexposed by laser light remain isolating, which restricts the current density distribution to the cross-section of the laser mode. Experimental light-current-voltage curves show hysteresis behavior induced by the phototransistor. The background depicts PT-VCSEL test structures with contact openings varying from 10 to 150 µm diameter. See the related article on p. 13.