

Photonic- Corral – Mode Quantum Ring Lasers investigated by Laser Scanning Microscopy.

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Photonic-corral-mode quantum ring (PQR) lasers with the linewidth narrower than 0.55 Å generate micro-to-nano-ampere thresholds, and become ideal for CMOS-driven high-density emitter arrays for intra-chip optical interconnect.

The PQR offers the following advantages for extremely high- density emitter source chip, towards the other semiconductor lasers presently available: a photonic quantum corral effect leads to naturally- born quantum wire behaviours; the μA - nA threshold current capabilities mean kilo to mega PQR chip; $T^{1/2}$ – dependent spectral red shifts are smaller at high operating temperatures, allowing uniform and reliable chip emission with minimal temperature sensitivities [1,2].

Previously has been reported the possibility to investigate Al- free laser quantum-well semiconductor structure by using LBIC technique in Laser Scanning Microscopy and Confocal Scanning Laser Microscopy (CSLM) [3].

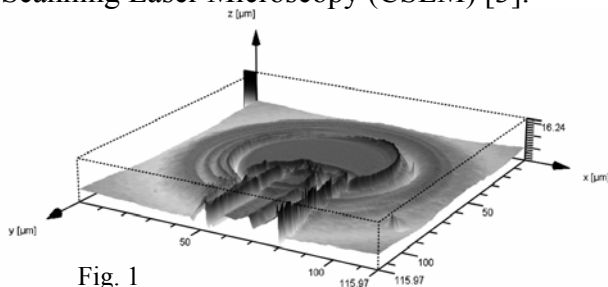


Fig. 1

In this paper we present some of our investigation on the PQE structure and of the PQE active area using CSLM and LBIC technique. In the Fig 1. it is shown the image of the PQR structure acquired by CSLM in reflexion mode.

References.

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