

# 3<sup>rd</sup> International Conference and Exhibition on **Lasers, Optics & Photonics**

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## 10 GHz orthogonally polarized dual frequency VECSEL at 1550 nm

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Optically pumped VECSEL attract more attention due to their advantages like low threshold laser emission, good output beam quality, and wide power scaling. We present the realization of room temperature dual frequency VECSELS at 1550 nm, based on the single laser cavity sustaining the oscillation of two adjacent, orthogonally polarized modes. The two modes are separated by 10 GHz, with output power till 12 mW per mode. The laser design essential element is a  $\frac{1}{2}$  VECSEL with a thermal optimized structure, enabling efficient evacuation of heat out of the gain region. The laser cavity design is optimized to obtain stable  $\sim 10$  GHz frequency difference, between two cross polarized modes around 1550 nm, at room temperature. The developed laser source can be used in efficient heterodyning sensors.

### Biography

Léa Chaccour received an MSc in Physics from 'Université Lille 1 Sciences et Technologie'. In 2013, she started her PhD at IFSTTAR. She is also working at LPN-CNRS labs in collaboration between IFSTTAR and LPN-CNRS.

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