

**NOVEL SEMICONDUCTOR LASER-BASED
ARCHITECTURES FOR DUAL-COMB
SPECTROSCOPY IN THE NEAR-INFRARED,
MID-INFRARED AND THz RANGES**

by Borja Jerez González

in partial fulfilment of the requirements for the degree of Doctor in the Ph.D
Program in Electrical Engineering, Electronics and Automation

Universidad Carlos III de Madrid

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ANEXO

List of publications included as *Selected publications* in this PhD Thesis

Manuscript 1:

Borja Jerez, Pedro Martín-Mateos, Estefanía Prior, Cristina de Dios and Pablo Acedo. Dual optical frequency comb architecture with capabilities from visible to mid-infrared. In: *Optics Express* 24 (13), 14986-14994 (2016).

URI: <http://hdl.handle.net/10016/31390>

Manuscript 2:

Jerez, B.; Martín-Mateos, P.; Prior, E.; Dios, C. de; Acedo, P. Gain-Switching injection-locked dual optical frequency combs: characterization and optimization. In: *Optics Letters* 41 (18), 4293-4296 (2016).

URI: <http://hdl.handle.net/10016/31385>

Manuscript 3:

Borja Jerez, Frederik Walla, Cristina de Dios, Pedro Martín-Mateos and Pablo Acedo. Fully frequency-locked multiheterodyne architecture for remote optical frequency comb rapid detection. In: *Journal of Lightwave Technology* 35 (19), 4195-4202 (2017).

URI: <http://hdl.handle.net/10016/28090>

Manuscript 4:

Jerez, B.; Martín-Mateos, P.; Walla, F.; Dios, C. de; Acedo, P. Flexible electro-optic, single-crystal difference frequency generation architecture for ultrafast mid-infrared dual-comb spectroscopy. In: *ACS Photonics* 5 (6), 2348-2353 (2018).

URI: <http://hdl.handle.net/10016/31435>

Manuscript 5:

Jerez, B.; Szedlak, R.; Martín-Mateos, P.; Dios, C. de; Acedo, P.; Strasser, G. Large-signal modulation in distributed feedback quantum cascade lasers for coherent multiharmonic signal generation. In: *Optical and Quantum Electronics*, 50:351 (2018).

URI: <http://hdl.handle.net/10016/31440>

Manuscript 6:

Jerez, B.; Walla, F.; Betancur, A.; Martín-Mateos, P.; Dios, C. de; Acedo, P. Electro-optic THz dual-comb architecture for high-resolution, absolute spectroscopy. In: *Optics Letters* 44 (2), 415-418 (2019).

URI: <http://hdl.handle.net/10016/31444>