## 4<sup>th</sup> International Conference on PHOTONICS & LASER TECHNOLOGY July 28-29, 2016 Berlin, Germany

## Single and dual wavelength Er:Yb double clad fiber lasers

Baldemar Ibarra-Escamilla Instituto Nacional de Astrofísica, Mexico

A ctively Q-switched fiber lasers have been investigated due their applications in remote sensing, medicine, and terahertz generation. This technique is usually achieved to improve pulses stability and higher pulse energies. Several active Q-switched fiber laser configurations based in the use of free-space, all-fiber or fiber pigtail acousto-optic have been reported. Moreover, double-clad fibers (DCFs) are attractive as gain medium due their high conversion energy feature. Recently, we have reported an Er/Yb DCF tunable laser in continuous wave (cw) and actively Q- switched fiber laser using a fiber Bragg grating (FBG) as wavelength selective in a linear cavity resonator. The minimum pulse durations were obtained with 420 ns at a repetition rate of 120 kHz and ~0.7 W average output power in cw and 1.03 W average output power in pulsed mode. Also, we reported an actively Q-switched dual-wavelength fiber laser using an Er/Yb DCF in a linear cavity limited by a pair of FBGs in one side, and a Sagnac interferometer in the other side. We also have reported a tunable dual-wavelength actively Q-switched Er/Yb DCF laser using a polarization maintaining FBG for both generated laser wavelengths tuning. In other configuration, we reported a ring cavity dual- wavelength fiber laser with an Er/Yb DCF. By mechanical compression/stretch applied on the FBGs the laser generated wavelength maximal separation was ~4 nm. In this work, we present a review of our previous work in the area of single and dual fiber lasers.

## **Biography**

Baldemar Ibarra-Escamilla received the Bachelor's degree in Electronics from the BUAP in Puebla, Mexico, in 1994. He received the MS and PhD degrees in Optics from the InstitutoNacional de Astrofísica, Optica y Electrónica (INAOE), Mexico, in 1996 and 1999, respectively. He did a Post-doctoral stay and a Sabbatical year at the Electro-Optics Graduate Program, University of Dayton, USA during 2000 and from July/2008-July/2009, respectively. He is currently a Researcher of the Optics Department at INAOE. His interests are in modelocked fiber lasers, fiber amplifiers, tunable fiber lasers, fiber sensors, high power fiber lasers and fiber optics nonlinear effects.

baldemar@inaoep.mx

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