

E-BABE- Analysis of Temporal Coherent beam Combining of two Q-Switched Fiber Laser in Mach-Zehnder Type Cavity

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Abstract

Over the past decade, rare earth fiber laser sources have become one of the most popular and fast developing laser technologies. A coherently combined laser system includes a combining element placed in front of the laser (toward the output coupler) to superpose the beams. In this work, we will present an analytical model of an actively Q-switched Ytterbium-doped fiber laser by using two coupled cavities with amplifying fibers in Mach-Zehnder interferometer configuration. This oscillator system provides high peak power and high energy nanosecond pulse. The pulse energy is almost twice the energy of an individual fiber laser with a combining efficiency goes up 99%. This concept brings some novel perspectives for scaling the high energy and high peak power of nanosecond pulse fiber laser.



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Biography:

Was born in Morocco, on January, 10, 1991. He took his Master's degree in systems and telecommunications at the Ibn Zohr University, Agadir, Morocco, in June 2014. He received the Ph.D. degree from Ibn Zohr University, Agadir, Morocco in July 2018. He is interesting to combining beam laser and shaped beam laser and rare earth ion doped fiber amplifier for telecommunication. He is currently a temporary teacher in faculty of sciences Ain Chock Casablanca Morocco