

Copper Based Passive Saturable Absorber for Pulsed Laser Generation in Erbium Doped Fiber Laser

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ABSTRACT

Owing to the simple setup, compact geometry, better robustness, zero alignment configuration and cost-saving nature, pulsed fiber lasers are gaining more attention in research and industrial scale. The researches on materials for saturable absorbers have been continuing since the last few decades. Metal based saturable absorbers such as gold (Au), silver (Ag) and copper has been reported to exhibit excellent optical properties. Unlike its metal counterparts, reports on copper based SA still fell short despite their ultrafast response time, broad operation spectrum, and large third order nonlinearity. This topic is focused on the development of copper nanostructures based saturable absorbers, the fabrication, material characterizations and their implementation for pulsed fiber laser generation within telecommunication wavelength.

BRIEF BIOGRAPHY

Fauzan Ahmad received the Degree in Mechatronics from Universiti Teknologi Malaysia in 1999, Master's Degree (Image processing) and PhD Degree in Electrical Engineering (Photonics) from University of Malaya in 2007 and 2014, respectively. He is currently a senior lecturer at Department of Electronic Systems Engineering, Malaysia-Japan International Institute of Technology (MJIT), Universiti Teknologi Malaysia. His research interest includes nano material for optical pulsed laser generation and optical fiber sensor.