

Ultrafast L Band Soliton Pulse Generation in Erbium-Doped Fiber Laser Based on Graphene Oxide Saturable Absorber

ABSTRACT

We demonstrate a simple mode-locked Erbium-doped fiber laser (EDFL) based on self-synthesized saturable absorber (SA) by combining graphene oxide (GO) and polyethylene oxide (PEO) solutions to form a GO-PEO thin film. This thin film was incorporated into an Erbium-doped fiber laser (EDFL) with a cavity length of 9 m. Our EDFL could operate at a 22 MHz repetition rate with a 0.8 ps pulse duration. The laser also showed stable soliton pulses under various laser pump power values. Our reported results show that GO-PEO SA is effective and proven as a cost-effective material for saturable absorbers for EDFLs.