

Pulse generation of mode-locking fiber laser at 1.053 μM using graphene oxide film as saturable absorber

ABSTRACT

This article depicts a reliable mode-locking Ytterbium-doped fibre laser (YDFL) utilizing a saturable absorber (SA) film which was created by combining graphene oxide (GO) and polyethylene oxide (PEO) solutions. A thin film was eventually formed from the polymer composite after it was dried at room temperature. The thin film is then integrated into the YDFL cavity to initiate mode-locking process. Pulse with repetition rate of 6 MHz is observed from oscilloscope. The estimated cavity length of YDFL is calculated at approximately 25 m a total net dispersion of $-20.397 \text{ ps}^2 / \text{km}$. This proves that our self-fabricated SA is successful and is proven as an effective SA.