

## **Characteristics of multiple wavelengths L-band Brillouin-erbium comb fiber laser at low pumping powers**

### **ABSTRACT**

This paper presents the characteristics of multiple wavelength L-band Brillouin-erbium comb fiber laser with intra-cavity pre-amplified Brillouin pump power technique at low pumping powers. The issue of EDF gain depletion and Brillouin gain saturation are resolved by the proposed structure. The laser structure achieves a low threshold power and is able to produce high number of output channels at low pumping powers. It produces up to 33 channels at 50 mW and 0.042 mW of 1480 nm pump and Brillouin pump powers, respectively.