

Generation of optical frequency combs with a short photonics crystal fiber

ABSTRACT

Self-seeded four wave mixing (FWM) cascades with a 50 m long photonics crystal fiber (PCF) as the parametric gain medium are presented. Up to six comb lines are successfully generated when the amplifier output power is set at 519.28 mW. That relatively short length of the PCF enables the proposed scheme to be more compact in size in comparison to a 500 m long of highly nonlinear fiber, utilized in previous work.

Keyword: Photonic crystal fibers; Self-seeded four wave mixing (FWM) cascades; Comb lines