1.9 m lasing with Tm3+/Yb3+co-doped air-clad fiber and 931 nm pumping

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Abstract: A 1.9 m single mode laser is demonstrated by employing a newly developed large mode area Tm3+/Yb3+ co-doped air-clad photonic crystal fiber (PCF) in conjunction with 931 nm pumping for the first time. The PCF has an Yb3+ and Tm3+ ion concentrations of about 16 x 1019 and 4 x 1019 ions/cc, respectively. The laser produces a maximum output power of 4.6 mW with an efficiency slope of 0.70% at a multimode pump power of 2.3 W with a 2.7 m long PCF in a linear cavity with two fiber Bragg grating. The threshold of the input pump power is obtained at around 1.3 W. (c) 2013 Wiley Periodicals, Inc. Microwave Opt Technol Lett 55:11241126, 2013; View this article online at wileyonlinelibrary.com. DOI 10.1002/mop.27523

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