Bi_2O_3-based erbium-doped fiber laser with a tunable range over 130 nm

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A Bi_2O_3-based erbium-doped fiber (BIEDF) ring laser with a 134 nm tunable range is demonstrated with only 0.2 m of BIEDF as a gain media. The widely tunable range corresponds to the broad amplified spontaneous emission spectrum obtained from BIEDF. The pump power dependence and BIEDF length dependence of fiber laser properties are investigated. The tunable range varies depending on both pump power and BIEDF lengths. A high optical signal-to-noise ratio of over 70 dB for a 120 nm tunable range is also shown.

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