

## **Spectral changes produced by an adjustable intra-cavity Fabry–Perot interferometer inside an ytterbium-doped fiber laser**

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**Laser Physics**, Volume 25, Number 9 095101 (2015)

### **Abstract**

The experimental results reported here consist on the intra-cavity introduction of a very simple Fabry–Perot interferometer into a free-running fiber laser. A wide-band free-running fiber laser was first characterized and then compared to its intra-cavity modified version in order to establish differences in performance. The intra-cavity type system presented superior performance in most aspects. For example, the pump power for oscillating decreased, the oscillating bands were sharper and, at a certain degree, it was wavelength-tunable. On the basis of these results we propose this approach that is simple, inserts a minimum cavity loss and is polarization-independent as an alternative to improve performance in some fiber lasers as well as optical fiber sensors.