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Indonesian Journal of Electrical Engineering and Computer Science  
Volume 8, Issue 2, November 2017, Pages 457-461

## Dual-wavelength thulium ytterbium Co-doped fiber laser (Article)

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## Abstract

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We report on the generation of dual-wavelength fiber laser peaking at 1990.64 and 1998.92 nm with a simple ring cavity setup. The lasers are demonstrated using a fabricated silica-based nano-engineered octagonal shaped double-clad Thulium-Ytterbium co-doped fiber (TYDF) as a gain medium in a simple all-fiber ring configuration. By using 980 nm multimode laser, a stable dual-wavelength laser is generated at a threshold pump power of 1500 mW due to the non-polarization rotation (NPR) effect occurred in the cavity. The effect has been self-controlled by a suppression of mode competition in the gain medium. The result shows that the slope efficiency of the generated dual-wavelength laser is measured to be 27.23%. This dual-wavelength TYDF laser operated steadily at room temperature with a 34 dB optical signal-to-noise ratio. © 2017 Institute of Advanced Engineering and Science. All rights reserved.

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## Author keywords

Dual-wavelength fiber laser Nano-engineered glass NPR effect Silica-based TYDF

## Funding details

Funding number	Funding sponsor	Acronym	Funding opportunities
RIGS15-145-0145	International Islamic University Malaysia	IUM	See opportunities by IUM

## Funding text

Author would like to acknowledge the International Islamic internal funding by the university under Grant No.: RIGS15-145-0145.

ISSN: 25024752

Source Type: Journal

Original language: English

DOI: 10.11591/ijeecs.v8.i2.pp457-461

Document Type: Article

Publisher: Institute of Advanced Engineering and Science

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