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Bulletin of Electrical Engineering and Informatics
Volume 8, Issue 3, September 2019, Pages 1022-1027

Investigation of output power in ring CW fiber laser using graphene saturable absorber (Article)

Hamida, B.A.^a ✉, Eltaif, T.^a, Noh, F.D.B.M.^b, Khan, S.^a 🔍

^aFaculty of Engineering, International Islamic University Malaysia, Jalan Gombak, Kuala Lumpur, 53100, Malaysia

^bFaculty of Engineering & Technology; Multimedia University, Bukit Beruang, Melaka, 75450, Malaysia

Abstract

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This paper reported the effect of different coupling ratio in continuous wave fiber laser in a ring cavity configuration. Different coupling ratios of 10/90 and 50/50 were tested. Where the output power may vary depending on the ratio and it can be applied to specific area that requires either high or low output power. In addition, generation of passive Q-switched erbium doped fiber laser (EDFL) using graphene based saturable absorber in ring cavity using different coupling ratio was experimentally investigated. As a result, wavelength centered at 1566.62nm is obtain from EDFL cavity. Moreover, the cavity using coupler of 50/50 is capable to achieve Q-switched pulses as compared to the cavity using coupler of 10/90. Where the maximum output power recorded is 336mW with pulse repetition rate of 23.74 kHz. In addition, the pulse width is 3.84μs, and pulse energy is 14.15nJ. © 2019 Institute of Advanced Engineering and Science. All rights reserved.

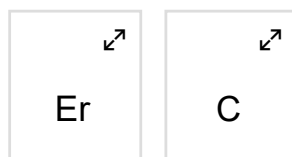
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Fiber coupler Graphene saturable absorber Passive Q-switched

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This work was supported by International Islamic University Malaysia, (RIGS15-148-0148) and Multimedia University, project SAP ID: MMUI/180246. The authors would like to thank University Malaya for providing training and equipment for this research.

ISSN: 20893191

Source Type: Journal

Original language: English

DOI: 10.11591/eei.v8i3.1497

Document Type: Article

Publisher: Institute of Advanced Engineering and Science

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