

Brought to you by [INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA](#)



Scopus



[Back](#)

O-band mode-locked femtosecond praseodymium-doped fluoride fiber laser using a nickel metal-organic framework

2025 Conference on Lasers and Electro-Optics Europe and European Quantum Electronics Conference, CLEO/Europe-EQEC 2025 • Conference Paper • 2025 •

DOI: 10.1109/CLEO/EUROPE-EQEC65582.2025.11111580

Ahmad, Harith^{a,b,c}; Nizamani, Bilal^a; Samion, Muhamad Zharif^a; Mutlu, Saliha^{d,e}; Yilmaz, Sevil Savaşkan^{d,e}; +3 authors

^a Photonics Research Centre, Universiti Malaya, Kuala Lumpur, 50603, Malaysia

[Show all information](#)

0

Citations

[Full text](#) [Export](#) [Save to list](#)

[Document](#)

[Impact](#)

[Cited by \(0\)](#)

[References \(3\)](#)

[Similar documents](#)

Abstract

Mode-locked fiber lasers are particularly noteworthy due to their compactness, affordability, and reduced losses, making them an attractive option for a variety of uses. Metal-organic frameworks (MOFs) have recently been identified as suitable saturable absorbers (SAs) in lasers operating at 1.5- and 2 μm wavelengths [1, 2]. MOFs represent a novel class of porous solid materials formed by the combination of inorganic metal ions and organic linkers. These frameworks exhibit exceptional material properties, such as a large surface area, structural diversity, tunable bandgap, and luminescence, making them highly advantageous for various applications in laser technology. This work presents an ultrafast mode-locked fiber laser operating in the relatively less explored O-band region, utilizing a nickel MOF (Ni-MOF) as a saturable absorber. © 2025 IEEE.

Indexed keywords

Engineering controlled terms

Crystalline materials; Fluorine compounds; Locks (fasteners); Metal ions; Metal-Organic Frameworks; Mode-locked fiber lasers; Nanotechnology; Nickel; Nickel compounds; Organic lasers; Porous materials; Praseodymium compounds

Engineering uncontrolled terms

Band modes; Femtoseconds; Fluoride fibre; Inorganic metals; Loss making; Metalorganic frameworks (MOFs); Mode-locked; Porous solids; Reduced loss; Solid material

Engineering main heading

Saturable absorbers

© Copyright 2025 Elsevier B.V., All rights reserved.

Abstract

Indexed keywords

About Scopus

[What is Scopus](#)

[Content coverage](#)

[Scopus blog](#)

[Scopus API](#)

[Privacy matters](#)

Language

[日本語版を表示する](#)

[查看简体中文版本](#)

[查看繁體中文版本](#)

[Просмотр версии на русском языке](#)

Customer Service

[Help](#)

[Tutorials](#)

[Contact us](#)

ELSEVIER

[Terms and conditions](#) ↗ [Privacy policy](#) ↗ [Cookies settings](#)

All content on this site: Copyright © 2025 [Elsevier B.V.](#) ↗, its licensors, and contributors. All rights are reserved, including those for text and data mining, AI training, and similar technologies. For all open access content, the relevant licensing terms apply.

