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Laser Physics Letters
Volume 17, Issue 8, August 2020, Article number 085103

155 nm-wideband and tunable q-switched fiber laser using an MXene $Ti_3C_2T_X$coated microfiber based saturable absorber (Article)

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Abstract

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MXenes have recently gained significant research interest due to its graphene-like structure that allows for a multitude of applications such as electronics, batteries and optics to be realized. In this work, stable Q-switched pulses are passively obtained from a thulium-doped fiber laser using an MXene Ti3C2TX coated microfiber as a saturable absorber (SA). The generated pulses have center lasing wavelength 1976 nm with a pulse repetition rate and pulse width ranging between 16 kHz to 59 kHz and 13 s to 2.4 s respectively. The generated pulses can be tuned over a wavelength range of 155 nm from 1895 nm to 2050 nm. The MXene based SA has signficant potential for generating pulsed laser outputs that will find uses in the areas of sensing, medicine and spectroscopy around the 'eye safe' 2 m region. © 2020 Astro Ltd.

SciVal Topic Prominence

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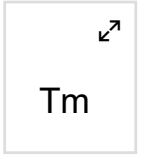
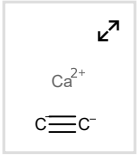
Substances





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microfiber MXene Q-switched tunable

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