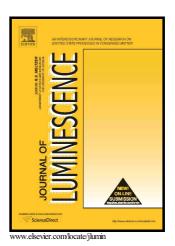
### Author's Accepted Manuscript

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#### **ACCEPTED MANUSCRIPT**

# Er<sup>3+</sup>-doped Oxyfluorogallate Glass for

### 2.7 µm Solid-State Lasers

Ya-Pei Peng,<sup>1,2</sup> Chuanfeng Wang,<sup>1,3</sup> Xinqiang Yuan,<sup>1\*</sup> and Long Zhang<sup>1,†</sup>

<sup>1</sup>Key Laboratory of Materials for High Power Laser, Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences, Shanghai 201800, China;

<sup>2</sup>University of Chinese Academy of Sciences, Beijing 100039, China

<sup>3</sup>College of Materials Science and Engineering, Shanghai University, Shanghai 201800, China

Abstract: An Er³+-doped oxyfluorogallate glass is investigated as a laser material with 2.7 μm emission. The 2.7 μm emission properties of the Er³+-doped oxyfluorogallate glasses are obtained using a 980 nm laser diode and their spontaneous transition probabilities and branching ratios are predicted using Judd–Ofelt theory. The maximum value of emission cross-section of Er³+ around 2.7 μm reached 1.32×10<sup>-20</sup> cm², which suggests a very promising application of oxyfluorogallate glass for efficient 2.7 μm solid-state laser system.

**Key words:** Rare earth-doped materials; Glass; Laser materials; Spectroscopy; Mid-infrared.

<sup>\*</sup> Author to whom correspondence should be addressed. E-mail: xinqiang@mail.siom.ac.cn

<sup>&</sup>lt;sup>†</sup> Author to whom correspondence should be addressed. E-mail: lzhang@siom.ac.cn

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