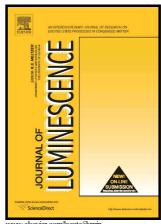
# Author's Accepted Manuscript

Design and synthesis of a novel fluorescentcolorimetric chemosensor for selective detection of Zn(II) and Cu(II) ions with applications in live cell imaging and molecular logic gate

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www.elsevier.com/locate/ilumin

PII: S0022-2313(18)30097-8

https://doi.org/10.1016/j.jlumin.2018.09.016 DOI:

LUMIN15899 Reference:

To appear in: Journal of Luminescence

Received date: 18 January 2018 Revised date: 24 August 2018 Accepted date: 4 September 2018

Cite this article as: Pravat Ghorai, Saikat Banerjee, Dipta Nag, Subhra Kanti Mukhopadhyay and Amrita Saha, Design and synthesis of a novel fluorescentcolorimetric chemosensor for selective detection of Zn(II) and Cu(II) ions with applications in live cell imaging and molecular logic gate, Journal of Luminescence, https://doi.org/10.1016/j.jlumin.2018.09.016

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## **ACCEPTED MANUSCRIPT**

Design and synthesis of a novel fluorescent-colorimetric chemosensor for selective detection of Zn(II) and Cu(II) ions with applications in live cell imaging and molecular logic gate

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#### Abstract

We present here the synthesis of a simple and low-cost Schiff base chemosensor (**HL**) for selective detection of both Zn(II) and Cu (II) in HEPES buffer pH=7.4. The chemosensor **HL** exhibits quick response through fluorescence and colorimetric changes for both Zn(II) and Cu (II) ions as examined by fluorescence and absorption titrations. Both the metal ions form 1:1 L–Zn(II) (complex **1**) and 1:1 L–Cu(II) (complex **2**) complexes, confirmed by Job's Plot. We are successful to elucidate the structure of complex **1** through X-ray diffraction analysis. Reversibility of the chemosensor in its binding with Zn(II) and Cu (II) ions separately is also examined in presence of Na<sub>2</sub>EDTA solution. The enhancement of fluorescence intensity of the chemosensor is based on the chelation-enhanced fluorescence (CHEF) effect of L–Zn(II) with

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