

Imidazolium-Salt-Based Fluorescent Chemosensor for Cu(II), Zn(II) and Co(II)

Qiang-Lin Li^{1,2,*}, Fang-Qian Huang³, Miao-Li Liu¹,
Xue-Jun Jiang¹ and Xiong Zheng¹

¹Printing & Dyeing Chemistry Department, Chengdu Textile College,
Chengdu, Sichuan 611731, China

²Department of Chemistry, Sichuan University,
29 Wangjiang Road, Chengdu, Sichuan 610064, China

³Department of Chemistry, Xianyang Normal University, Xianyang, Shanxi 712000, China

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A ligand of macrocyclic polyamine with an imidazolium salt group (MCP-ISG) and its Cu(II), Zn(II) and Co(II) metallic complexes were synthesized, and MCP-ISG was used as a chelation-enhanced fluorophore. The complexes of Cu(II), Zn(II) and Co(II) have different intensities of fluorescence response in a solution of pyridine/water (1:1). The fluorescence intensity of Cu(II) complex was enhanced in the solution while those of Co(II) and Zn(II) complexes were weakened markedly, with the Zn(II) complex showing the larger reduction. The interaction and fluorescence emission mechanisms of the ligand with the cations are also discussed in this paper.

Key words: macrocyclic polyamine, metallic complex, synthesis, fluorescent sensor, mechanism

*Corresponding author: e-mail: liqianglin1010@163.com