

论文

两种磺酰胺类化合物的合成及其对Fe³⁺的氧化-还原荧光“开-关”性质

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摘要:

合成了两种磺酰胺类化合物, 并研究了其荧光性能. 通过它们对金属阳离子的选择性识别实验, 发现其在乙醇水溶液中均对Fe³⁺有专一性的识别作用, 并在NH₂OH·HCl和H₂O₂的存在下, 两种化合物对Fe³⁺都具有氧化-还原荧光“开-关”作用.

关键词: 磺酰胺 氧化-还原 荧光“开-关”

Syntheses of Two Kinds of Tosylamine Compounds and Their Fluorescence Switch Character for the Oxidation-reduction of Fe³⁺

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Abstract:

Two kinds of Tosylamine compounds(I, II) were synthesized and their fluorescence abilities were studied. Through the study of their recognition with Cu²⁺, Zn²⁺, Pb²⁺, Mg²⁺, Cd²⁺, Mn²⁺, Ca²⁺, Hg²⁺, Fe²⁺, Fe³⁺, Ni²⁺, Co²⁺ cations, it was found that both of the two kinds of compounds had recognition to Fe³⁺ in EtOH/H₂O system through a series of iron-reorganization study. The fluorescence was changed by the addition of Fe³⁺, in which the fluorescence intensity of compounds I, II at 338 nm or 339 nm decreased. Under the co-existence of NH₂OH·HCl and H₂O₂, both of the two compounds showed up that there could be a fluorescence switch by oxidation-reduction of Fe³⁺.

Keywords: Tosylamine Oxidation-reduction Fluorescence switch

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