

Rhodamine derivative synthesis: dual-detectable chemosensor

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Rhodamine derivative synthesis: dual-detectable chemosensor

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Abstract

Rhodamine chromophore/fluorophore have been attracted to many researchers due to its excellent photophysical properties. In this study, we have designed and synthesized a strong emissive fluorescent dye chemosensor for toxic elements. A rhodamine-based sensor was prepared by incorporation the rhodamine fluorophore and several functional host groups with high affinity to hazardous metal and anion. This sensor shows a high selectivity and an excellent sensitivity and is a dual-responsive colorimetric and fluorescent metal/anion-specific sensor. In addition, the 1:1 binding mode was proposed based on Job's plot method. Finally, computational calculation was simulated and calculated to approach for HOMO/LUMO of this dye chemosensor.

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