

酸および共役塩基アニオン認識性のフルカラー発光性 ESIPT色素の色調変化

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Color Changes of a Full-Color Emissive ESIPT Fluorophore in Response to Recognition of Certain Acids and Their Conjugate Base Anions

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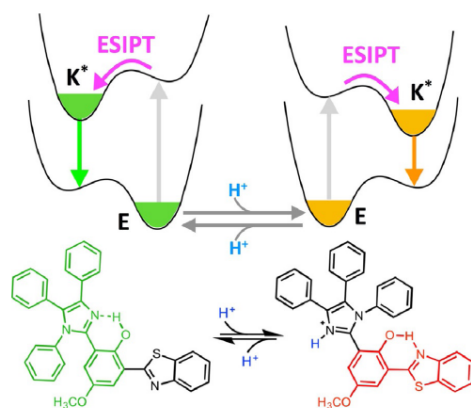


Figure 1. Molecular structure of ESIPT molecule **1** and ESIPT energy diagram according to the protonation

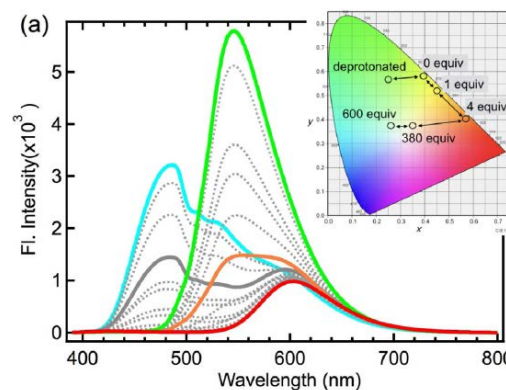


Figure 2. Fluorescence spectra of **1** in dioxane by the addition of ClO_4^- anion.

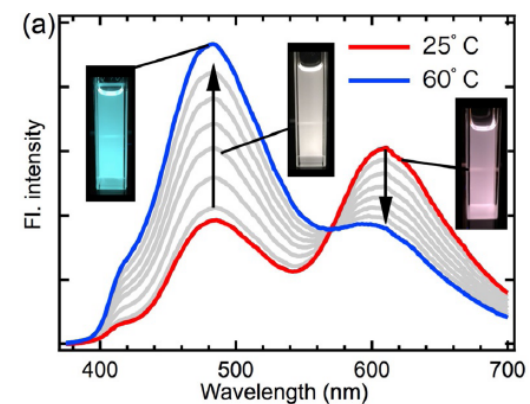


Figure 3. Temperature dependent fluorescence spectra of **1** in THF.

BTImP (**1**) は、分子内プロトン移動型のESIPT発光分子であり、分子内水素結合の酸応答性が、フェノールプロトンからイミダゾールあるいはベンゾチアゾール部位でスイッチングする。結果、分子**1**は赤-緑-青-白のフルカラーの発光を、 HClO_4 や HBF_4 の添加により実現させた。

BTImP (**1**) is an excited-state intramolecular proton transfer (ESIPT) fluorophore, containing an acid-stimuli-responsive intramolecular hydrogen bond that can switch from the central phenolic proton to the imidazole (Im) or benzothiazole (BT) nitrogen atoms. Here, we demonstrate that **1** shows full-color (red, green, blue, and white) emission upon the addition of different concentrations of HClO_4 or, with time, after the addition of HBF_4 .