

アミンの吸着による3-(2-Benzothiazolyl)-4-hydroxyl-benzene sulfonic acidのESIPT発光クロミズムとコンフォメーション変化

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ESIPT Fluorescent Chromism and Conformational Change of 3-(2-Benzothiazolyl)-4-hydroxy-benzenesulfonic acid by Amine Sorption

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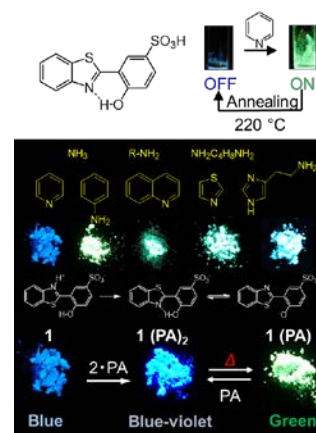


Figure 1. ESIPT chromic molecule **1** and response for various organic bases.

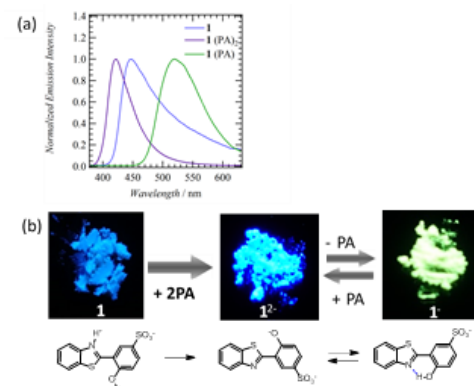


Figure 2. Stepwise PA adsorption-desorption cycle coupled with ESIPT fluorescence chromism in crystal **1**.

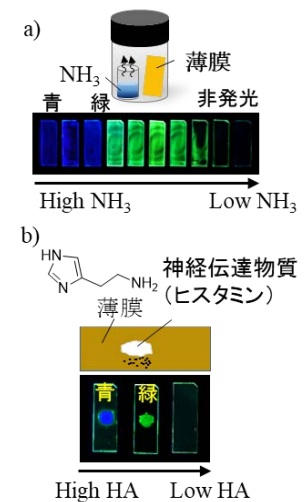


Figure 3. NH_3 and HA sensing using ESIPT chromism of solid state **1** on quartz substrate.

Sulfonic acid substituted 2-(2'-hydroxyphenyl)benzothiazole (**1**) was designed as a new solid-state ESIPT fluorescent chromic molecule that responds to various types of organic bases and amines as a sensing device of biologically important molecules such as ammonia and histamine. The sorption behavior of these compounds induced the fluorescent chromism of crystal **1** from non-ESIPT weak blue, to ESIPT strong green, and finally to non-ESIPT strong green emissions.

スルホン酸置換型の2-(2'-hydroxyphenyl)benzothiazole (**1**)を、ヒスタミンやアンモニアなどの生体分子や多様な有機塩基に応答可能な固体ESIPT蛍光クロミック分子として設計した。これらの分子の吸着は、非ESIPT型の青、ESIPT型の緑、非ESIPT型の強い緑発光へと蛍光クロミズムを示した。