

Unusual π - π Stacking Interactions Between 5,5'-Azotetrazolate(AT) Anions in Six AT Based 3d Metal Photochromic Complexes

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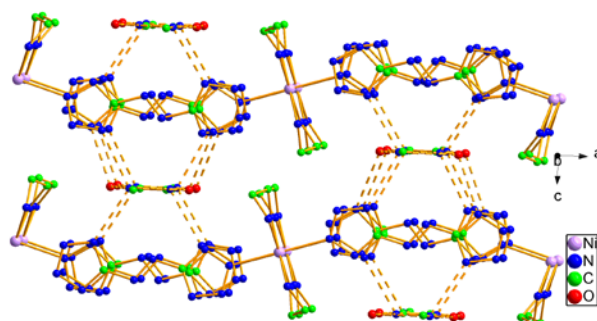


Fig. S1 The 3D supramolecular structure showing the hydrogen bonds in 2.

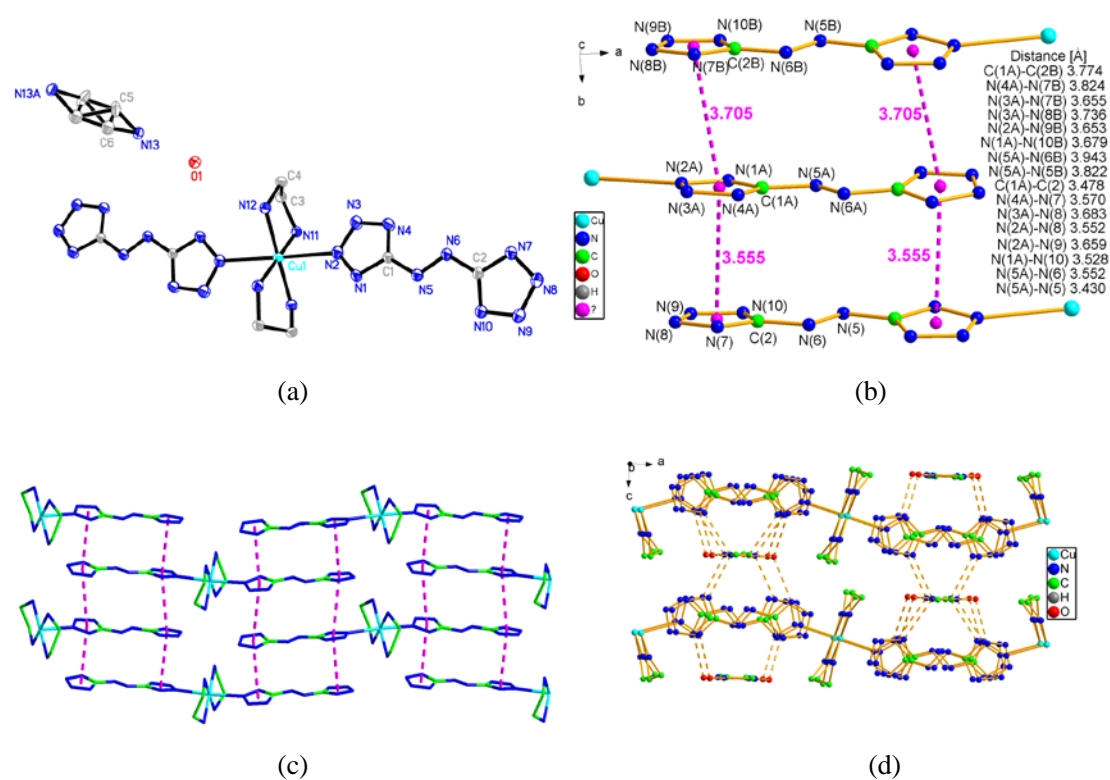


Fig. S2 (a) ORTEP view (30% thermal ellipsoids) of 3, (b) the face-to-face tetrazolate anions alignment showing the π - π stacking interaction in 3, (c) layer of π -systems form by π - π stacking, (d) the 3D supramolecular structure showing the hydrogen bonds. Symmetry codes: A = 0.5-x, 1-y, z; B = x, -1+y, z.

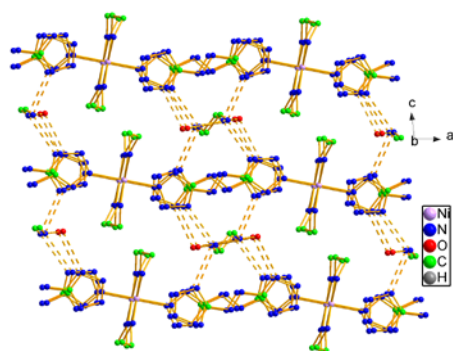


Fig. S3 The 3D supramolecular structure showing the hydrogen bonds in **4**.

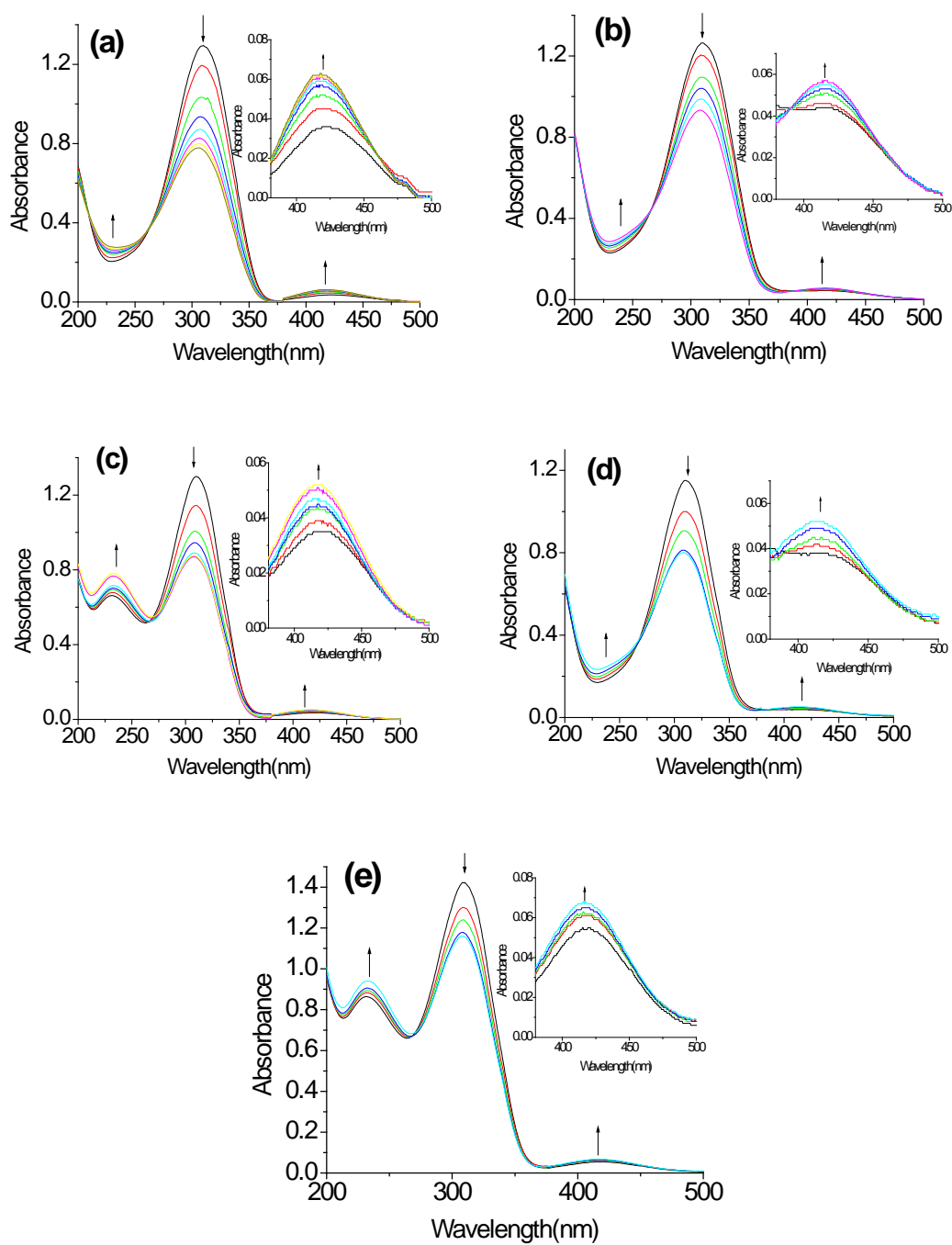


Fig. S4 UV-vis spectral changes of ligand SAT (a) and complexes **2** (b), **3** (c), **4** (d), and **5** (e) in aqueous solutions with the concentration of 2×10^{-5} mol.L⁻¹ upon repeated irradiation at 312 nm at 2 min intervals at room temperature.

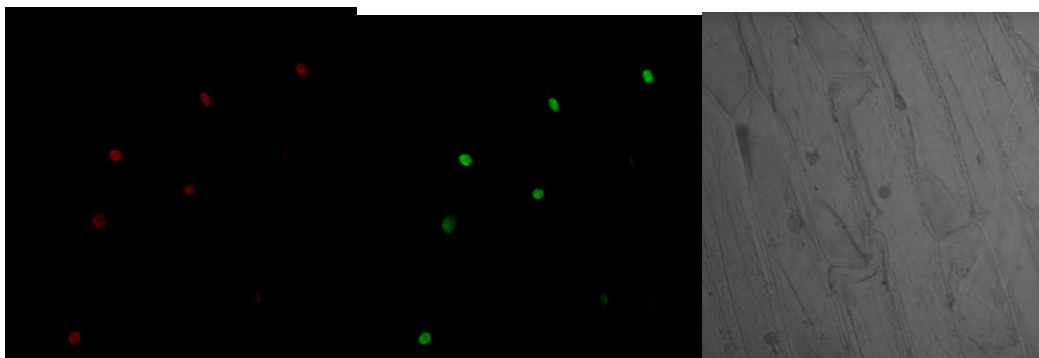


Fig. S5 The multicolor imaging of onion cell using SAT as imaging agent under 408nm laser excitation. The onion sample was first immersed in 8% HCl for 5 minutes and washed with H₂O, then immersed in a 10^{-3} mol.L⁻¹ aqueous solutions of **SAT** for 20 minutes and washed with an amount of H₂O.

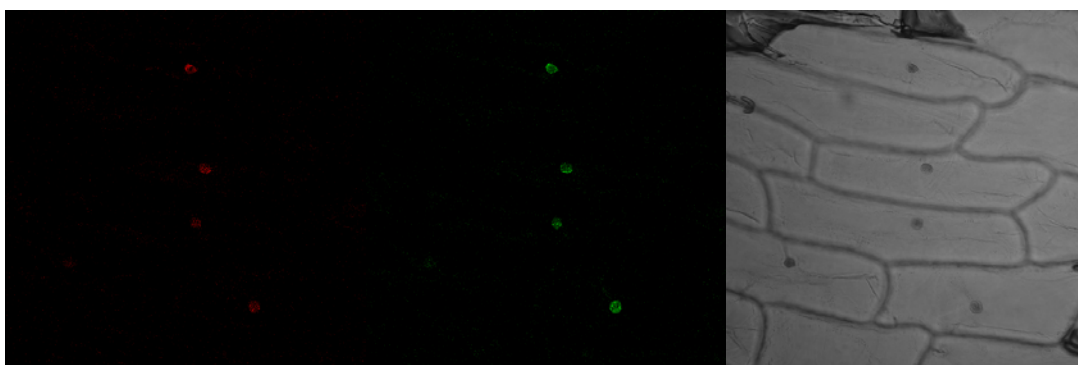


Fig. S6 The multicolor imaging of onion cell using **1** as imaging agent under 408nm laser excitation. The onion sample was first immersed in 8% HCl for 5 minutes and washed with H₂O, then immersed in a 10^{-3} mol.L⁻¹ aqueous solutions of **1** for 20 minutes and washed with an amount of H₂O.

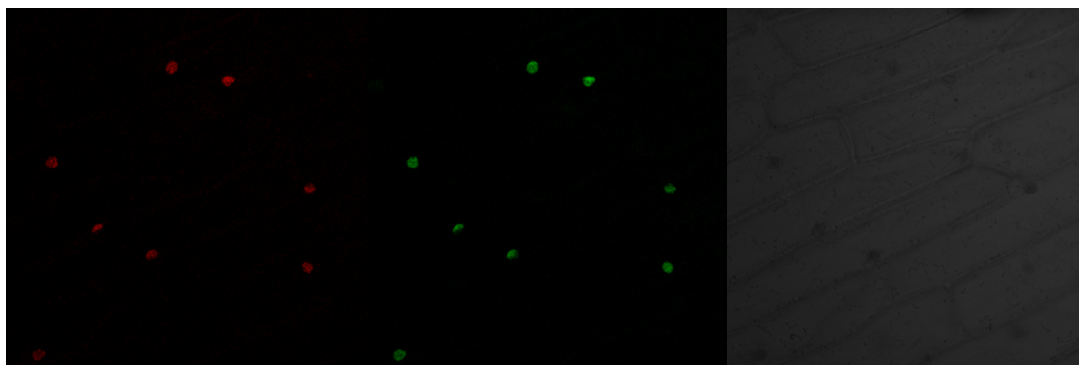


Fig. S7 The multicolor imaging of onion cell using **3** as imaging agent under 408nm laser excitation. The onion sample was first immersed in 8% HCl for 5 minutes and washed with H₂O, then immersed in a 10^{-3} mol.L⁻¹ aqueous solutions of **3** for 20 minutes and washed with an

amount of H₂O.

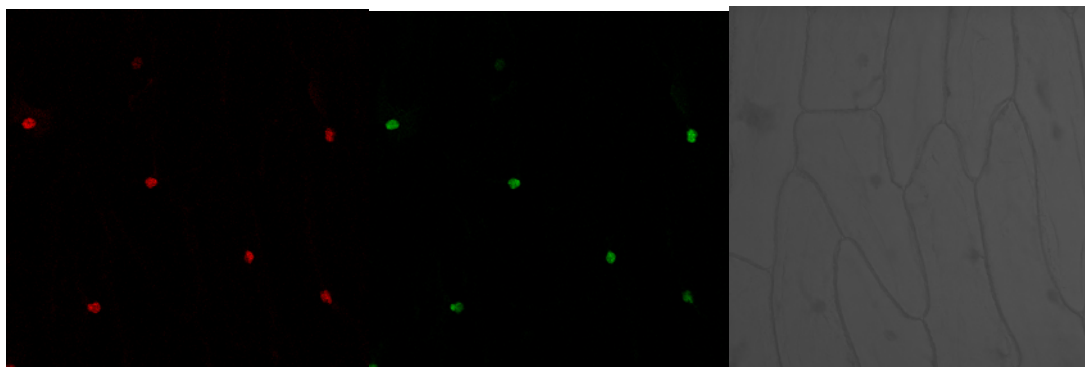


Fig. S8 The multicolor imaging of onion cell using **4** as imaging agent under 408nm laser excitation. The onion sample was first immersed in 8% HCl for 5 minutes and washed with H₂O, then immersed in a 10⁻³ mol.L⁻¹ aqueous solutions of **4** for 20 minutes and washed with an amount of H₂O.

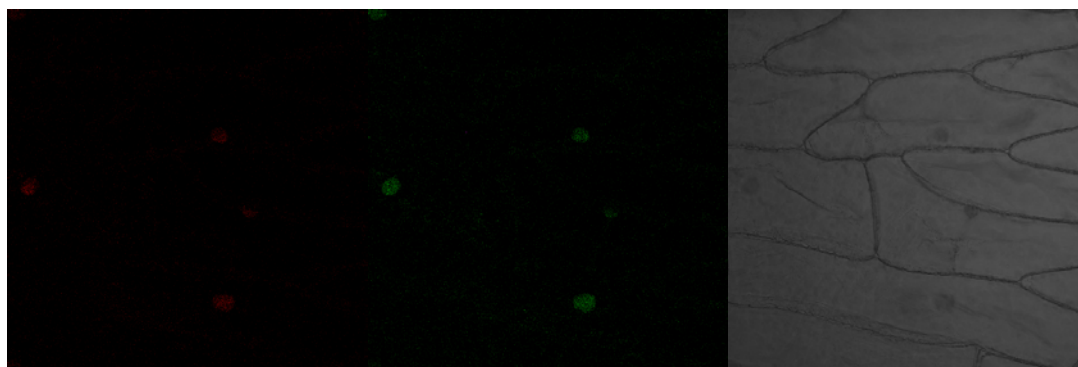


Fig. S9 The multicolor imaging of onion cell using **5** as imaging agent under 408nm laser excitation. The onion sample was first immersed in 8% HCl for 5 minutes and washed with H₂O, then immersed in a 10⁻³ mol.L⁻¹ aqueous solutions of **5** for 20 minutes and washed with an amount of H₂O.

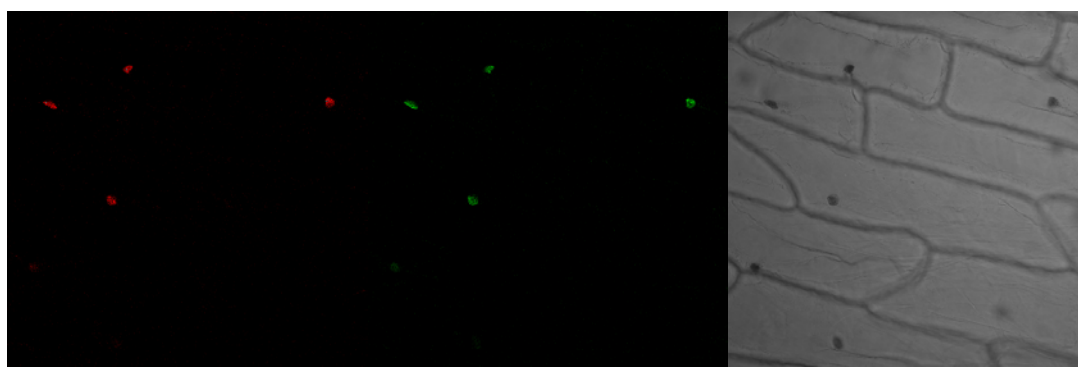


Fig. S10 The multicolor imaging of onion cell using **6** as imaging agent under 408nm laser excitation. The onion sample was first immersed in 8% HCl for 5 minutes and washed with H₂O, then immersed in a 10⁻³ mol.L⁻¹ aqueous solutions of **6** for 20 minutes and washed with an amount of H₂O.