



**Distortional isomerism is a new class of supramolecular isomerism and these isomers can sense the presence of Brady's reagent among other nitro compounds!** Distortional isomer is also known as bond-stretch isomer differs only in the length of one or more bonds, which has been found to be due to crystallographic disorder in most cases, but shown to exist in Cu(II) due to its plasticity. Here we have used the term distortional isomerism to describe the structures of polyrotaxane 2D coordination polymers (CPs) differ only by the relative positions in the neighboring entangled axles. A large ring and a long spacer ligand in 2D CPs yielded four different supramolecular isomers, of which two have entangled polyrotaxane structure. Interestingly, one pair of C=C bonds in the spacer ligand is well-aligned in one isomer and undergoes [2+2] cycloaddition reaction, whereas the other isomer is photo-inert. Apart from photochemical reactivity, they also have different sensing efficiency for several aromatic nitro compounds as investigated by photoluminescence (PL) quenching experiments. However both the isomers show selective PL quenching for the Brady's reagent. Structurally similar supramolecular isomers exhibiting different photochemical reactivity and sensing abilities appear to be unprecedented.

*Distortional Supramolecular Isomers of Polyrotaxane Coordination Polymers: Photoreactivity and Sensing of Nitro Compounds* by In-Hyeok Park, Raghavender Medishetty, Ja-Yeon Kim, Shim Sung Lee,\* and Jagadese J. Vittal, *Angewandte Chemie*, 2014, 53, xxx. (DOI: 10.1002/anie. 201310536).

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