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Title: Synthesis, Characterization and Photoswitching Studies of Photoswitchable Azopyridine Based

Ionic Compounds

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Abstract:

Azobenzene-based photoswitching molecules are used in a variety of fields such as photopharmacology, dye industry, construction of molecular machines, etc. N-Heterocycle-based azoheteroarenes are known to show efficient photoisomerization as well as considerably long half-life for the thermally unstable photoisomer. However azopyridine based ionic compounds are known to be extremely fast photoswitches. Here we have incorporated five membered heterocycle in a series of azopyridine based photoswitchable ionic compounds and studied the photoswitching properties of such compounds with different counteranions. The aim of this study include a) the effect heterocycle part, b) the effect of alkyl chain length, c) the effect of counter anions, d) the effect of solvent on the thermal stability of azopyridine based ionic photoswitches, and e) optimization of the specific cation, anion combination that will produce photoswitchable ionic liquids

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