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Title:	Azoisoxazole Based Photoswitchable Ionic Liquids
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Abstract:	<p>Ionic Liquids (ILs) are salts with very low melting point (typically < 100 °C). Ionic liquids are unique compared to other molecular species since their properties are tunable and peculiar. Ionic liquids have low vapour pressure, excellent thermal stability and good electrical conductivity. Such ILs have been investigated with a wide range of molecules to incorporate additional properties. In this current investigation, ILs incorporated photoswitchable molecules have been considered as targets towards making them photoswitchable ILs. Azobenzenes are molecules with two phenyl groups separated by N=N double bond got significant attraction due to their high optical sensitivity. Azobenzene compounds with light switchable properties have been widely examined in several fields based on their photoresponsive reversible isomerization. Azobenzene based ionic liquids have attracted considerably due to the possibility of light modulated properties change. In earlier reports, azobenzene has been incorporated as a separate entity to impart photoresponsive character into the ionic liquid structure to produce photoresponsive functions to ionic liquids. However, due to the recent progress in azoheteroarene based switches, in particular, the advantages such as high Z-isomers stability and better photoisomerization in both directions, provide opportunities in utilizing them in the ILs. Besides that, the heterocyclic moieties can be used for direct incorporation of both IL part, as well as photoswitching part at a proximal position in making novel designs of photoswitchable ILs. In this regard, we used alkylated azoisoxazole as the target photoswitchable ILs. Through this contribution, we present the alkylation of azoheteroarene based photoswitches to synthesize the targets, and investigations on their stability, photoswitching aspects and conductivity properties.</p>
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