

## Alkyne-containing photochromic diarylethenes for charge transport and fluorescence switching: revealing and avoiding their degradation

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Photochromic diarylethenes are successfully applied as molecular wires with switchable conductance and for nanoscopic visualization of self-assembly of polymers.<sup>[1,2]</sup> Those bearing alkyne moiety can be widely modified using “click”-chemistry. However, already during the preparation of such molecules undesired side reactions may decrease the yield drastically (Fig. 1a). Furthermore, even after successful synthesis the target alkyne derivative may undergo the spontaneous irreversible transformation (Fig. 1b). We managed to characterize the degradation products, to investigate its mechanism of formation, to devise an alternative synthetic approach towards desired photoswitches, and to explore their photochemical properties.

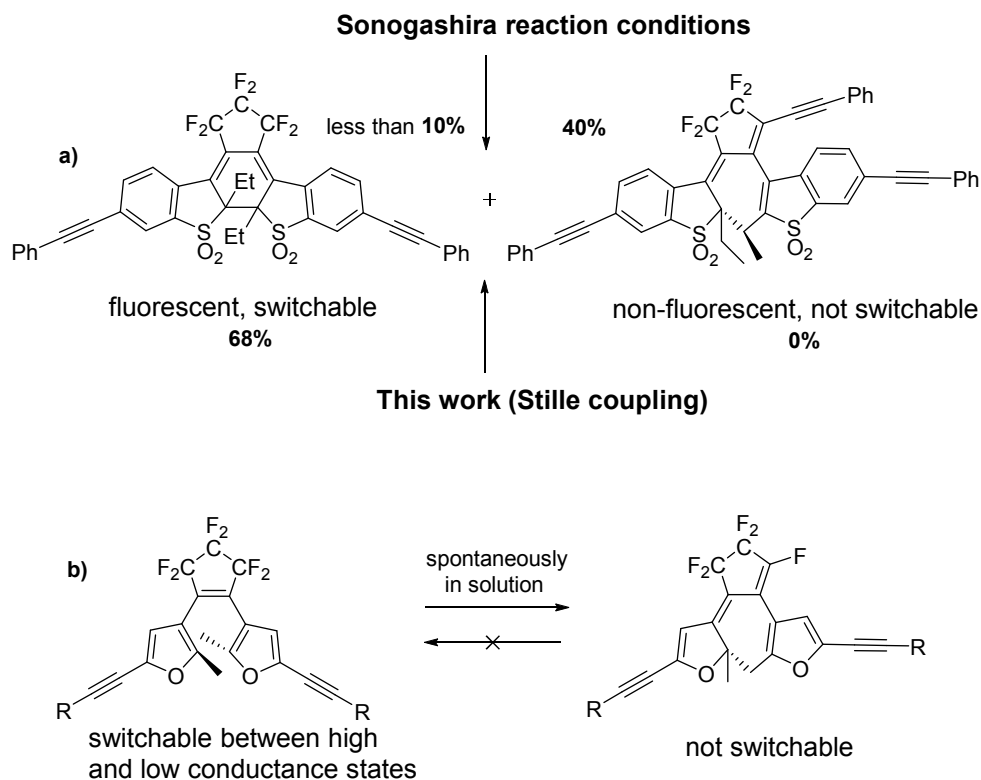


Figure 1. Alternative approach to the fluorescing alkynyl photoswitches starting from diiododiarylethene (a), and degradation product of the photochromic molecular wire (b).

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**References:**

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