Formation of stimuli-responsive cyclophanes by self-assembly: the case of carbazole-based biradicals

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Dynamic covalent bonds has recently received lot of attention because of their unique feature to become reversible under mild conditions.[1] In this context, π-conjugated biradical compounds has emerged as essential building blocks.[2] For instance, we have demonstrated that 2,7-dicyanomethylene-9-(2-ethylhexyl)carbazole biradical reversibly converts to a macrocycle cyclophane upon soft stimuli (temperature, pressure, light), showing strong chromic effects.[3] We now extent this study towards longer conjugated carbazole backbone (*i.e.*, indolocarbazole shown in Figure 1), aiming at investigating how the elongation of the conjugated backbone impacts on the formation of stimuli-responsive cyclophanes. The self-assembly process is investigated both in solution and solid state by linking theory and experiments.

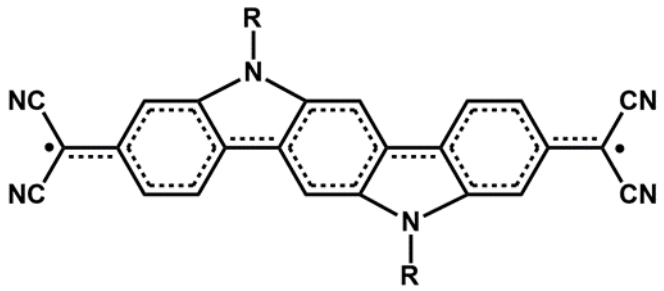

Figure 1. Indolocarbazole-based biradical systems under study.

References

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