Chloride Anion Controlled Molecular “Switching”. Binding of 2,5,7-Trinitro-9-dicyanomethylenefluorene-C60 by Tetrathiafulvalene Calix[4]pyrrole and Photophysical Generation of Two Different Charge-Separated States

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Auteur	Nielsen, Kent-A. [1], Sarova, Ginka-H. [2], Martín-Gomis, Luis [3], Stein, Paul-C. [4], Sanguinet, Lionel [5], Levillain, Eric [6], Sessler, Jonathan-L. [7], Guldi, Dirk.-M. [8], Sastre-Santos, Ángela [9], Jeppesen, Jan-O. [10]
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Résumé en anglais	The binding of the snake-like trinitrodicyanomethylenefluorene-C60 derivative (TNDCF-C60) to the dynamic receptor, tetrathiafulvalene calix[4]pyrrole (TTF-calix[4]pyrrole), may be controlled via the use of a chloride anion as an external trigger. Whereas, in the absence of a chloride anion, the TNDCF ?tail? of the trinitrodicyanomethylenefluorene-C60 substrate binds to the TTF?calix[4]pyrrole in a 2:1 (substrate/receptor) stoichiometry in CH2Cl2 solution, addition of a chloride anion (yellow) leads the TNDCF tail to be displaced in favor of a bound C60 ?head?, a process that leads to the formation of a complex with overall 1:2:2 substrate/receptor/chloride anion stoichiometry. These chemical switching events are reflected in easy-to-visualize color changes, as well as in the production of two different kinds of charge-separated states following selective femtosecond photoexcitation.
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