A Cation Sensor: All Saddled Up

Significance: Anthraquinodimethane-type extended tetra(thia)fulvalenes (TTFAQs) are known for having a rigid, non-planar, saddle-like structure in the neutral state. Here the authors demonstrate the ability of this class of extended tetra(thia)fulvalenes to act as selective metal cation sensors, in particular Ba$^{2+}$.

Comment: Uncomplexed 1 shows a quenched fluorescence due to electron transfer between the electron-donating, thiafulvalene-containing unit, and the electron-accepting anthracenes. The reduced electron-donating capabilities experienced upon crown ether–cation binding, suppresses the electron transfer, ‘turning on’ fluorescence.

SYNFACTS Contributors: Timothy M. Swager, Joel Batson

Synfacts 2010, 9, 1003-1003 Published online: 23.08.2010
DOI: 10.1055/s-0030-1257924; Reg-No.: S10110SF