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Coordination-induced molecular tweezing: ruthenium clusters docked at azuliporphyrinogens.

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Streszczenie

The reaction of [Ru3(CO)12] with a series of conformationally flexible thiaazuliporphyrinogens, namely, dithiadiazuli-, thiatriazuli- and tetraazuliporphyrinogen, yielded a series of complexes with two azulene rings coordinated by either Ru2(CO)5 and Ru4(CO)9 or two Ru4(CO)9 clusters. For dithiadiazuliporphyrinogen, three fundamental arrangements were detected, with two clusters being located at the same side or different sides of the meso plane. Coordination altered the electron density on the rings, allowing for dispersion-promoted interactions between coordinated azulenes. To create this face-to-face arrangement, the ligand framework performs a tweezing movement with coordinated azulenes approaching each other. The tweezer-like arrangement of the coordinated azulene rings assists the formation of azulene inclusion complexes as determined by 1H NMR titration.

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