Supporting Information

Synthesis of an Emissive Spectacle-shaped Hexanuclear Re(I) Complex

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Figure S1. Chart measured by size exclusion chromatography after the homo-coupling reaction for the Ring–Ring synthesis.
Figure S2. (a) ESI mass spectrum of the product of the coupling reaction and (b) the simulated isotope pattern calculated as Ring–Ring with a PF$_6^-$ anion.
Figure S3. IR spectra of Ring–Ring and corresponding model complexes (red: Ring–Ring; green: Ring(Me); blue: Ring(Br); and sky blue: Re–Re). The solvent is MeCN.
(a) Ring-Ring

MeCN: 421 nm
CH$_2$Cl$_2$: 430 nm

(b) Re-Re

MeCN: 457 nm
CH$_2$Cl$_2$: 475 nm
Figure S4. UV–vis absorption spectra measured in MeCN (red) or CH$_2$Cl$_2$ (blue); (a) Ring–Ring, (b) Re–Re, (c) Ring(Me).
In situ

(a)

CH$_2$Cl$_2$: 654 nm
MeCN: 666 nm

CH$_2$Cl$_2$: 654 nm
MeCN: 666 nm

(b)

Re-Re

CH$_2$Cl$_2$: 705 nm
MeCN: 701 nm

MeCN: 701 nm
CH$_2$Cl$_2$: 705 nm
Figure S5. Emission spectra measured in MeCN (red) or CH$_2$Cl$_2$ (blue); (a) Ring–Ring, (b) Re–Re, (c) Ring(Me).