

# SUPPORTING INFORMATION

## Enhanced Energy Conversion of Z907-Based Solar Cells by Cucurbit[7]uril Macrocycles

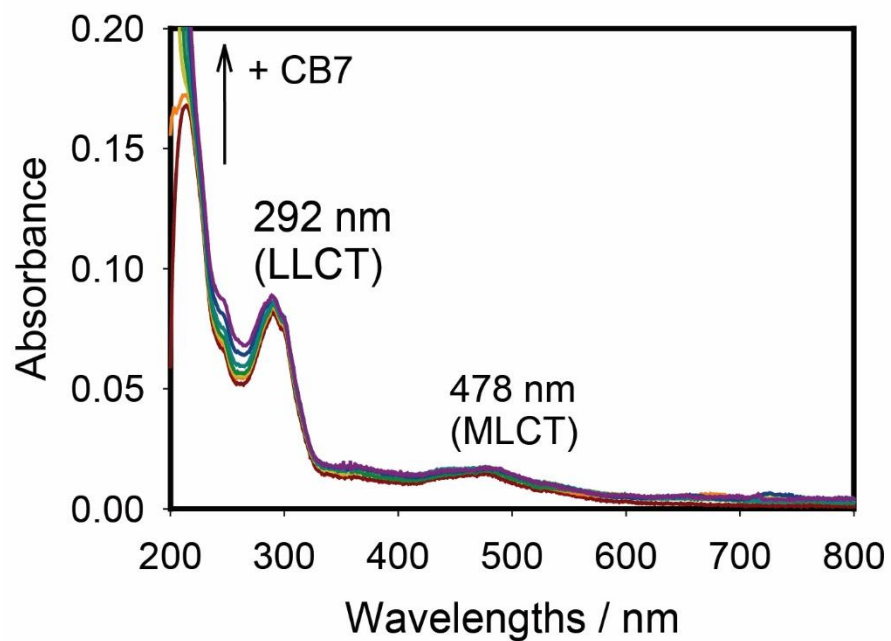
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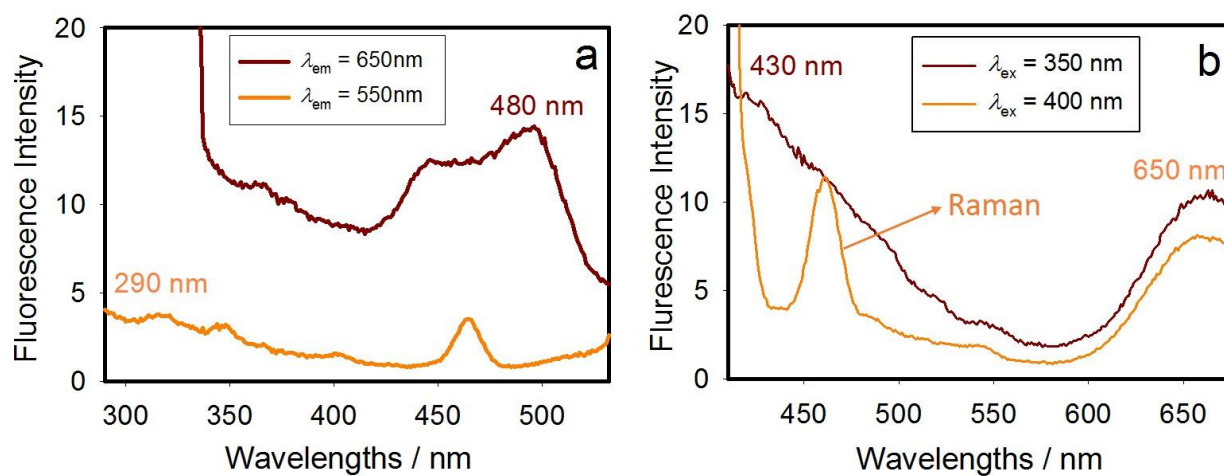
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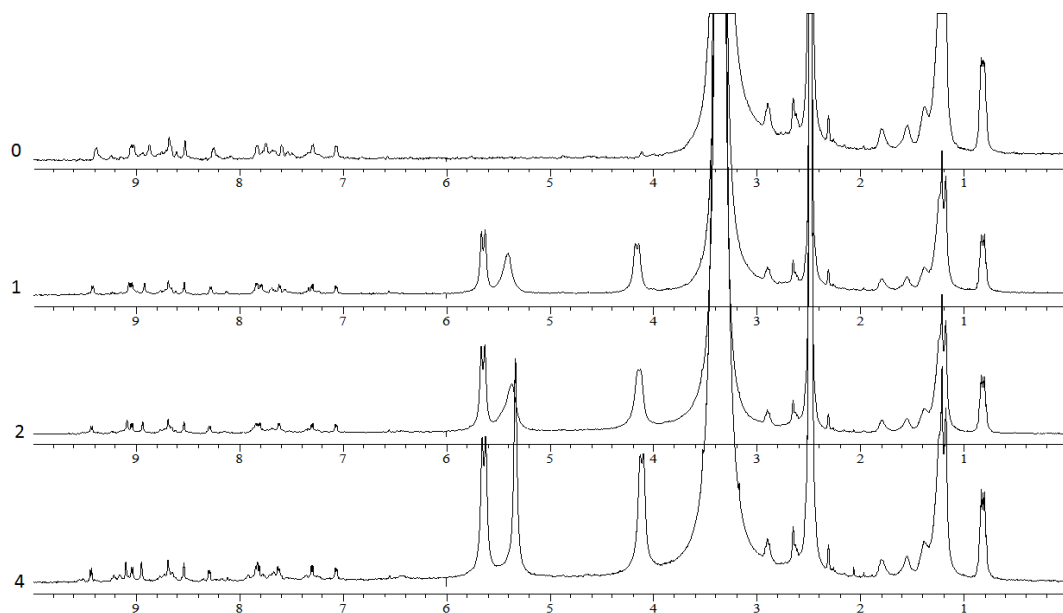
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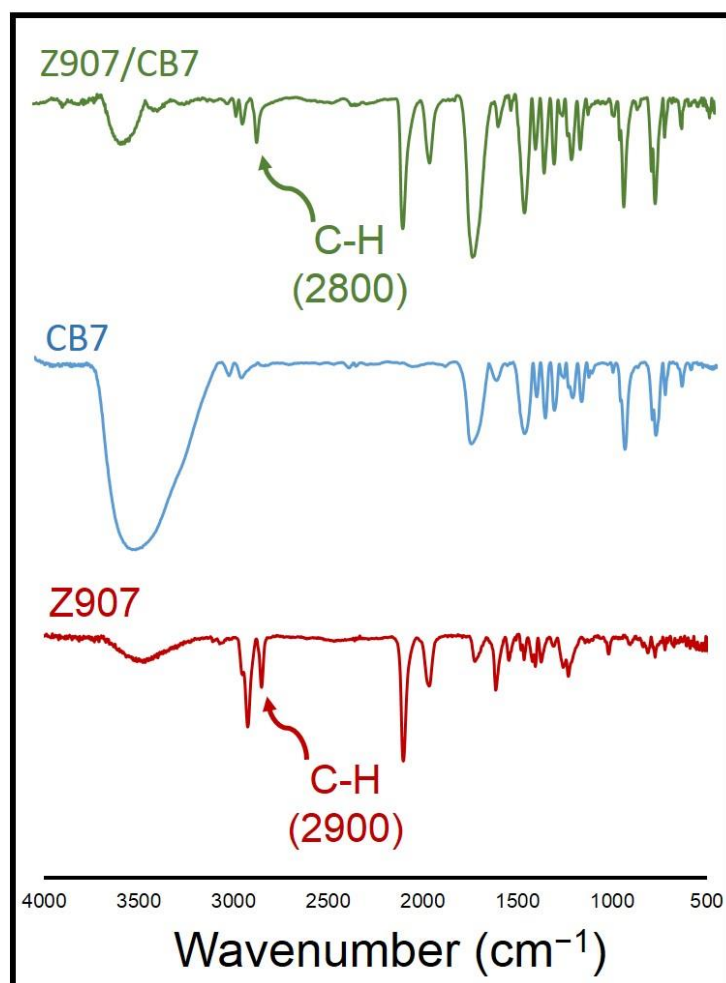
**Figure S1.** UV-vis absorption bands of Z907 (30  $\mu$ M) in acetonitrile and water (1:9 v/v) in the absence and presence of 0–50 equivalents CB7. No changes were observed.



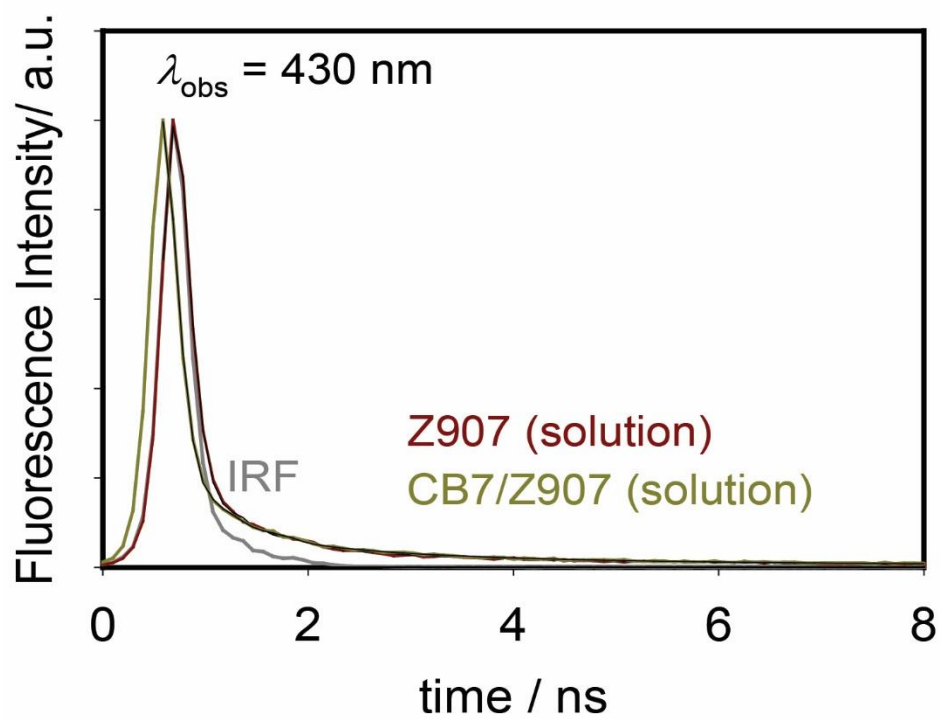
**Figure S2.** Excitation spectra (a) monitored at 550 and 650 nm of Z907 (30  $\mu\text{M}$ ) in in acetonitrile and water (1:9 v/v). And excitation-dependence emission spectra (b) at 350 and 400 nm of Z907 (30  $\mu\text{M}$ ) in in acetonitrile and water (1:9 v/v).



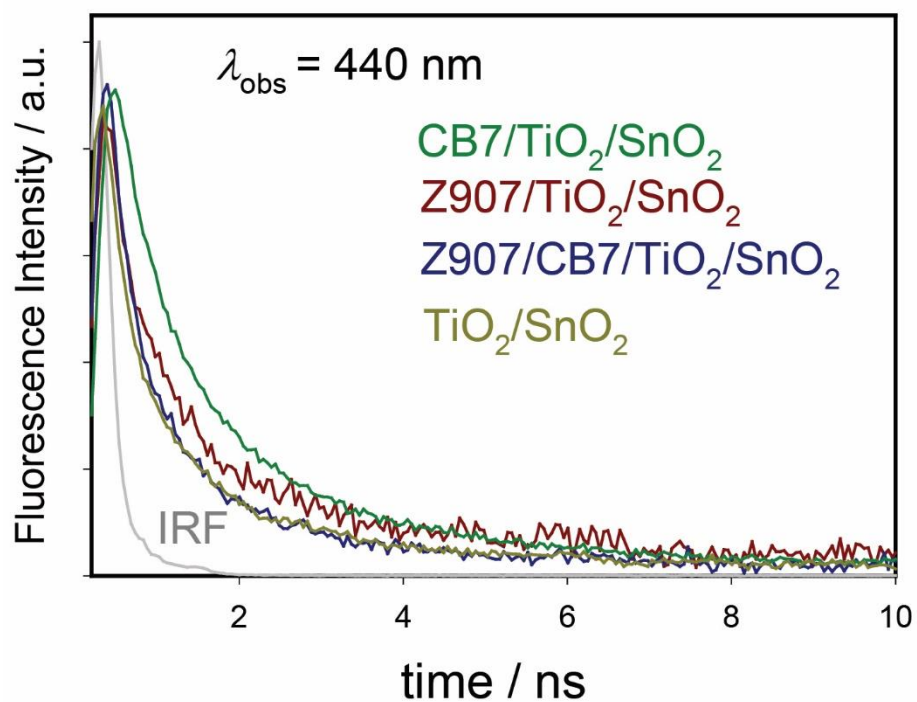
**Figure S3.**  $^1\text{H}$ -NMR titration of Z907 (1.0 mM) in  $\text{DMSO-d}_6$  in the absence and presence of 0–4 equivalents CB7. No changes were observed.



**Figure S4.** FTIR spectra of Z907, CB7 and their solid complex in KBr disk.



**Figure S5.** Emission decays monitored at 430 nm for Z907 (30  $\mu\text{M}$ ) in acetonitrile/water (1:9 v/v, pH 7) and inside CB7 (10 equivalents) upon excitation at 375 nm and room temperature.



**Figure S6.** Emission decays at 440 nm of  $\text{Z907/TiO}_2/\text{SnO}_2$  and  $\text{Z907/CB7/TiO}_2/\text{SnO}_2$  electrodes along with CB7-coated and uncoated  $\text{TiO}_2/\text{SnO}_2$  electrodes.