

## Electronic Supplementary Information

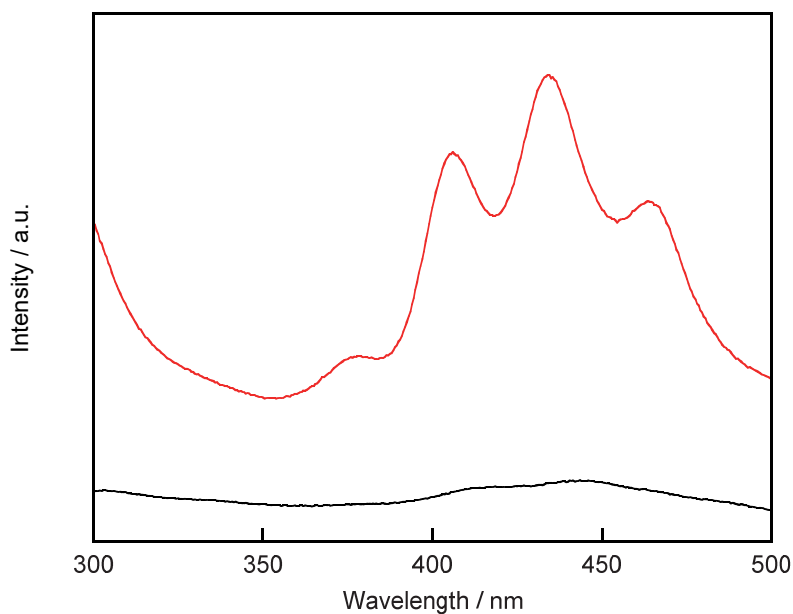
### Aqueous solutions with information on solids: room-temperature phosphorescence of polysaccharide–benzophenone complexes

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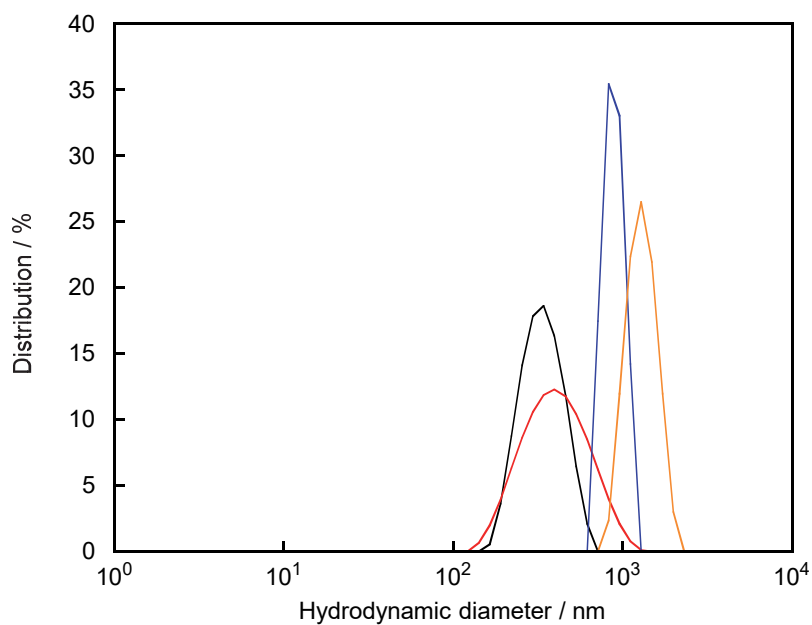
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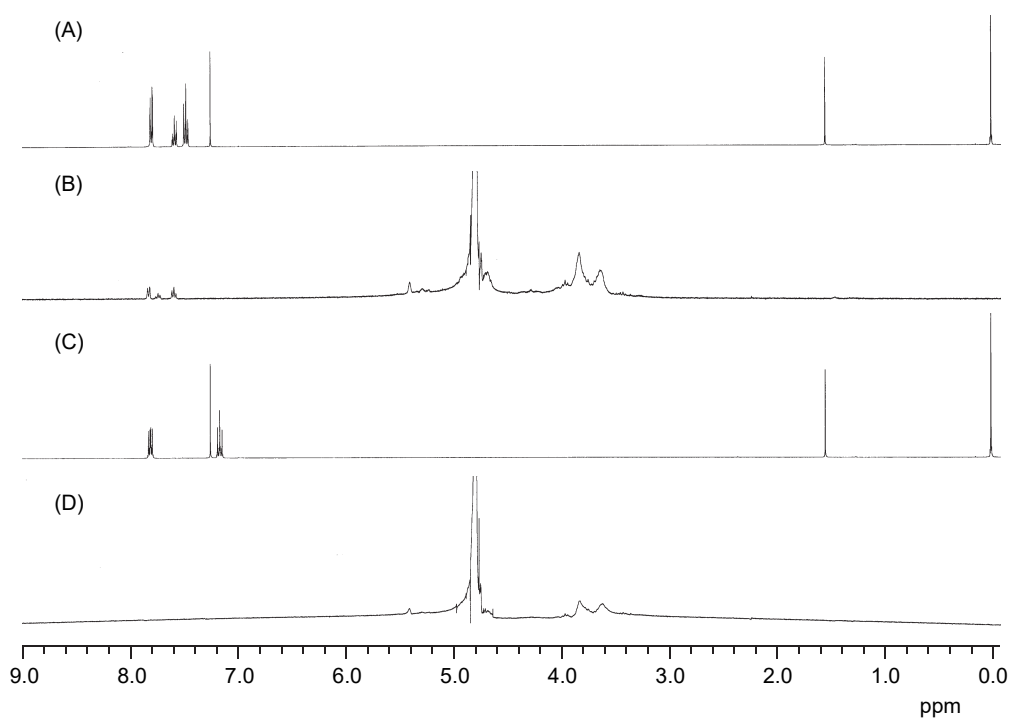
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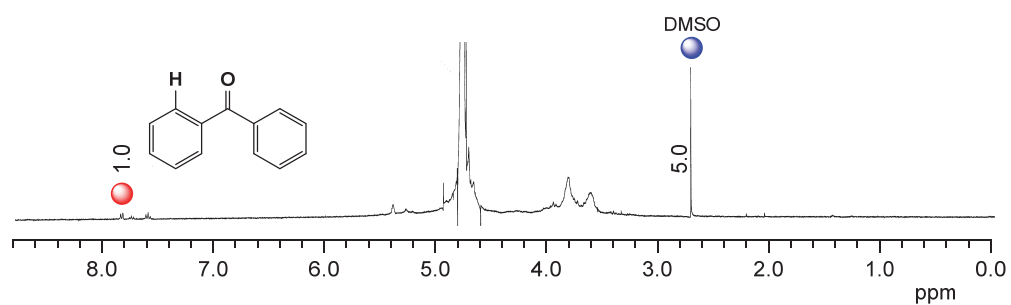
**Fig. S1** Fluorescence spectra of the aqueous solutions of the CGN-1 (black) and CGN-2 (red) complexes prepared by the grinding method (1 cm cell, 20 °C).  $\lambda_{\text{ex}} = 270$  nm, ex/em slits = 10/10 nm,  $[1] = [2] = 0.50$  mM.



**Fig. S2** DLS size-distribution profile for the aqueous solutions of the CGN-1 (black) and CGN-2 (red) complexes prepared by the HSVM method and the CGN-1 (blue) and CGN-2 (orange) complexes prepared by the grinding method.



**Fig. S3** <sup>1</sup>H NMR spectra of (A) **1** in CDCl<sub>3</sub>, (B) the CGN-1 complex in D<sub>2</sub>O, (C) **2** in CDCl<sub>3</sub>, and (D) the CGN-2 complex in D<sub>2</sub>O (400 MHz, 20 °C). These complexes were prepared by the grinding method.



**Fig. S4** <sup>1</sup>H NMR spectra of the CGN-1 complex in D<sub>2</sub>O with DMSO as the internal standard (400 MHz, 20 °C, [DMSO] = 0.145 mM). The complex was prepared by the grinding method.