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## Balanced $\pi$ - $\pi$ interaction directing the self-assembly of indolocarbazoles-based low molecular mass organic gelators

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## **Supporting Information**

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| Compounds  | Solutions <sup>a</sup>       |                          |                  |  |
|--|------------------------------|--------------------------|------------------|--|
|  | $\lambda^{abs}_{max}(nm)$    | $\lambda^{em}_{max}(nm)$ | $\Phi_{F}{}^{b}$ |  |
| 4  | 274, 298, 345, 362           | 367, 386,406             | 0.44             |  |
| 5  | 254, 278, 296, 352, 370, 388 | 412, 435, 460(shoulder)  | 0.39             |  |
| 6  | 289, 321, 371, 389           | 400, 418(shoulder)       | 0.66             |  |
| 7  | 279, 302, 352, 369           | 384, 403, 423            | 0.69             |  |
| 8  | 260, 279, 301, 355, 377, 395 | 420,445, 474(shoulder)   | 0.38             |  |
| 9  | 296, 319, 351, 392           | 403,425(shoulder)        | 0.45             |  |
| a: in THF (5 $\mu$ M); b: Using quinine sulfate in 0.1 H <sub>2</sub> SO <sub>4</sub> ( $\Phi$ F = 0.546) as the standard. |                              |                          |                  |  |

Table S1. Photophysical data of 4-9



Figure S1 The optimized molecular structures of 8 (a) and 9 (b) calculated by semi-empirical quantum

mechanical method (AM1 force field).

Compound 7



Figure S2 Cyclic voltammetry diagrams of compounds 7-9 in anhydrous CH<sub>2</sub>Cl<sub>2</sub> with 0.1 M Bu<sub>4</sub>NBF<sub>4</sub> as

electrolyte at a scan rate of 50  $mV{\cdot}s^{\text{-1}}$ 



**Figure S3** The optimized configurations for compounds **4**, **5**, **6** calculated by the B3LYP/6-31G method on Gaussian 09w software.



**Figure S4** The optimized configurations for compounds **7**, **8**, **9** calculated by the B3LYP/6-31G method on Gaussian 09w software.















Figure S8 MALDI/TOF MS spectrum of compound 2.







Figure S10 MALDI/TOF MS spectrum of compound 3.



Figure S11 <sup>1</sup>H NMR (400 MHz, DMSO-d6) spectrum of compound 4.



Figure S12 <sup>13</sup>C NMR (100 MHz, DMSO-d6) spectrum of compound 4.



Figure S13 MALDI/TOF MS spectrum of compound 4.



Figure S14 <sup>1</sup>H NMR (400 MHz, DMSO-d6) spectrum of compound 5.











Figure S17 <sup>1</sup>H NMR (400 MHz, DMSO-d6) spectrum of compound 6.



Figure S18 <sup>13</sup>C NMR (100 MHz, DMSO-d6) spectrum of compound 6.



Figure S19 MALDI/TOF MS spectrum of compound 6.



Figure S20 <sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectrum of compound 7.















Figure S24 <sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectrum of compound 8.



Figure S25 MALDI/TOF MS spectrum of compound 8.



Figure S26 <sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectrum of compound 9.







