**Electronic Supporting Information**

**Naphthalene linked pyridyl urea as supramolecular gelator: A new insight in naked eye detection of I in the gel state with semiconducting behaviour**

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**Table 1S. Result of gelation test for 1-5.**

<table>
<thead>
<tr>
<th>Solvents</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHCl\textsubscript{3}</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>S</td>
<td>I</td>
</tr>
<tr>
<td>2% Methanol in CHCl\textsubscript{3}</td>
<td>S</td>
<td>S</td>
<td>I</td>
<td>S</td>
<td>I</td>
</tr>
<tr>
<td>CH\textsubscript{3}COCH\textsubscript{3}</td>
<td>S</td>
<td>I</td>
<td>I</td>
<td>S</td>
<td>I</td>
</tr>
<tr>
<td>CH\textsubscript{3}COCH\textsubscript{3}:H\textsubscript{2}O (1:1, v/v)</td>
<td>P</td>
<td>I</td>
<td>I</td>
<td>S</td>
<td>I</td>
</tr>
<tr>
<td>DMF</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>DMF :H\textsubscript{2}O (1:1, v/v)</td>
<td>S</td>
<td>G (8 mg/mL)</td>
<td>P</td>
<td>S</td>
<td>I</td>
</tr>
<tr>
<td>CH\textsubscript{3}CN</td>
<td>S</td>
<td>I</td>
<td>I</td>
<td>S</td>
<td>I</td>
</tr>
<tr>
<td>CH\textsubscript{3}CN :H\textsubscript{2}O (1:1, v/v)</td>
<td>P</td>
<td>I</td>
<td>I</td>
<td>S</td>
<td>I</td>
</tr>
<tr>
<td>CH\textsubscript{3}OH</td>
<td>S</td>
<td>I</td>
<td>I</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>CH\textsubscript{3}OH : :H\textsubscript{2}O (1:3, v/v)</td>
<td>G (10 mg/mL)</td>
<td>I</td>
<td>I</td>
<td>S</td>
<td>P</td>
</tr>
<tr>
<td>DMSO</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>DMSO : H\textsubscript{2}O (1:1, v/v)</td>
<td>S</td>
<td>G (8 mg/mL)</td>
<td>P</td>
<td>S</td>
<td>I</td>
</tr>
<tr>
<td>DMSO : H\textsubscript{2}O (1:2, v/v)</td>
<td>G (6 mg/mL)</td>
<td>G (5 mg/mL)</td>
<td>P</td>
<td>P</td>
<td>I</td>
</tr>
</tbody>
</table>

S = solution, G = gel (minimum gelation concentration), I = insoluble, P = precipitation.
Fig. 1S. Hydrogels of 2 prepared from (a) DMSO: H₂O (1:2, v/v) and (b) DMF:H₂O (1:1, v/v).

![Hydrogels of 2](image)

Fig. 2S. Comparison of fluorescence decays of 1 (λₑₓ = 295 nm, λₑₘ = 370 nm) in solution and gel states in DMSO: H₂O (1:2, v/v).

![Fluorescence decays of 1](image)

Fig. 3S. Comparison of fluorescence decays of 2 (λₑₓ = 295 nm) in solution and gel states in DMSO: H₂O (1:2, v/v).

![Fluorescence decays of 2](image)
Fig 4S. Excitation spectra of 1 in gel state at emissions (a) 365 nm and (b) 416 nm.

Fig 5S. Excitation spectra of gel state of 2 at emissions (a) 367 nm and (b) 435 nm.
**Fig. 6S.** Excitation spectra of sol state of 1 (a) and 2 (b) at emissions 374 nm and 380 nm.

**Fig. 7S.** Rheological data for DMSO : H₂O (1:2, v/v) gel of 2.
Fig. 8S. Photograph showing the pH dependency of the hydrogels of 1 (a) and 2 (b) (in DMSO: H$_2$O, 1:2 v/v, 10 mg/ mL).

Fig. 9S. Photograph showing the changes in the DMSO: H$_2$O (1:2, v/v) gel of 1 (10 mg/ mL) after keeping contact with 1 mL aqueous solution of different anions (c = 9.5 x 10$^{-2}$ M as K$^+$ salt) for 2h.
Fig. 10S. Photograph showing the colour change of the hydrogel of 2 (in DMSO: H₂O, 1:2 v/v, 10 mg/mL) in presence of KI, NaI and TBAI after 2h, respectively.

Fig. 11S. Photograph showing the color changes in the gel state of 2 (where [c] represent the amount of gelators taken) in presence of 4 equiv amounts of aqueous KI ($c = 9.5 \times 10^{-2}$ M) with time (where G and G' represent states of the gels after 1h and 2h, respectively).
Fig. 12S. (a) SEM image of hydrogel of 2 with KI from DMSO : H$_2$O (1:2, v/v); (b) Photograph showing the color change of iodide treated gel of 2 in the presence of AgNO$_3$ (c = 0.5 M).

Fig. 13S. Photograph showing the colour change and selectivity of the hydrogel of 2 (in DMF: H$_2$O, 1:1 v/v, 10 mg/ mL) towards KI (c = 0.2 M; added in 500 µL amount) in absence and presence of 100 µL of each solution of KF, KCl and KBr (c = 0.2 M).
Fig. 14S. Change in (a) emission and (b) absorbance of 1 \( (c = 3.85 \times 10^{-5} \text{ M}) \) upon addition of 30 equiv. of TBAI \( (c = 1.54 \times 10^{-3} \text{ M}) \) in DMSO: \( \text{H}_2\text{O} \) (1:2, v/v).

Fig. 15S. Change in emission of 2 \( (c = 3.85 \times 10^{-5} \text{ M}) \) upon addition of 30 equiv. of (a) F\(^-\), (b) Cl\(^-\), (c) Br\(^-\), (d) AcO\(^-\), (e) \( \text{H}_2\text{PO}_4^- \), (f) \( \text{HSO}_4^- \) \( (c = 1.54 \times 10^{-3} \text{ M}) \) in DMSO: \( \text{H}_2\text{O} \) (1:2, v/v) (counter cation: tetrabutylammonium ion).
Fig. 16S. Change in absorbance of 2 (c = 3.85 x 10^{-5} M) upon addition of 30 equiv. of (a) F\(^-\), (b) Cl\(^-\), (c) Br\(^-\), (d) AcO\(^-\), (e) H\(_2\)PO\(_4\)^-\), (f) HSO\(_4\)^-\), (g) I\(^-\) (c = 1.54 x 10^{-3} M) in DMSO: H\(_2\)O (1:2, v/v) (counter cation: tetrabutylammonium ion).
Fig. 17S. Benesi–Hilderband plot for $2$ ($c = 3.85 \times 10^{-5}$ M) with $\Gamma$ ($c = 1.54 \times 10^{-3}$ M) at 378 nm.
$^1$H NMR (d$_6$-DMSO, 400 MHz)
$^{13}$C NMR (d$_6$-DMSO, 100 MHz)
Mass spectrum of 1.
$^1$H NMR (d$_6$-DMSO, 400 MHz)
$^{13}$C NMR (d$_6$-DMSO, 100 MHz)
Mass spectrum of 2.
$^1$H NMR (CDCl$_3$, 400 MHz)
$^{13}$C NMR (CDCl$_3$, 100 MHz)
$^1$H NMR (CDCl$_3$ containing one drop of d$_6$-DMSO, 400 MHz)
Mass spectrum of 5.