

## Supplementary Materials

# Inter- and Intra-Hydrogen Bonding Strategy to Control the Fluorescence of Acylhydrazone-based Conjugated Microporous Polymers and Their Application to Nitroaromatics Detection

*Inhwan Cha<sup>1,†</sup>, Seohyun Baek<sup>1,†</sup>, Sun Gu Song<sup>1</sup>, Junggong Kim<sup>2</sup>, Ho Keun Lee<sup>2</sup>, Jongman Lee<sup>2</sup>, Kyung-su Kim<sup>3,\*</sup> and Changsik Song<sup>1,\*</sup>*

<sup>1</sup>*Department of Chemistry, Sungkyunkwan University, 2066 Seobu-ro, Jangan-gu, Suwon-si, Gyeonggi-do 16419 Republic of Korea.*

<sup>2</sup>*PNL Global Co., Ltd., B1, 10 Sapyeongdae-ro 2-gil, Seocho-gu, Seoul 06652 Republic of Korea*

<sup>3</sup>*Convergence Research Center for Energy and Environmental Sciences, Sungkyunkwan University, 2066 Seobu-ro, Jangan-gu, Suwon-si, Gyeonggi-do 16419 Republic of Korea.*

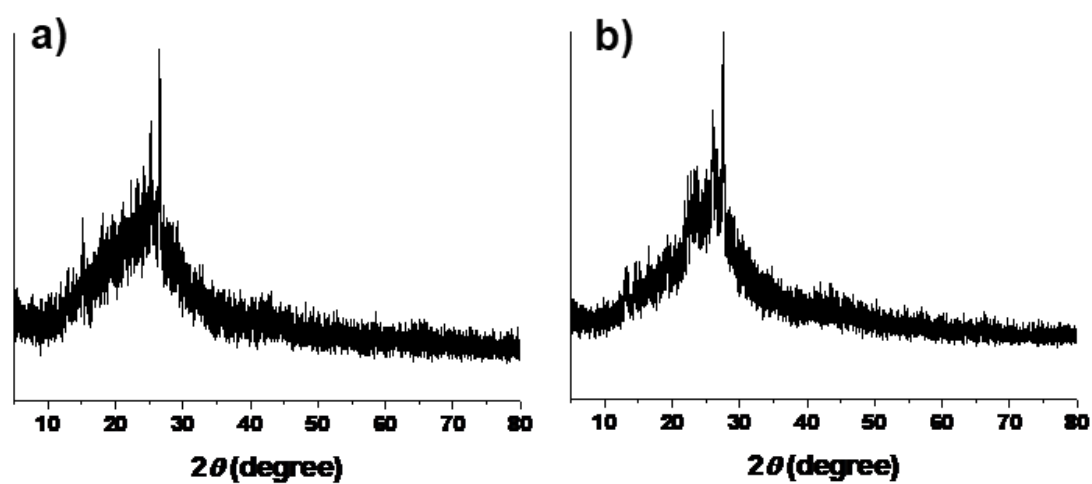
Email: [kimkyungsu@skku.edu](mailto:kimkyungsu@skku.edu) and [songcs@skku.edu](mailto:songcs@skku.edu)

†These authors contributed equally to this work.

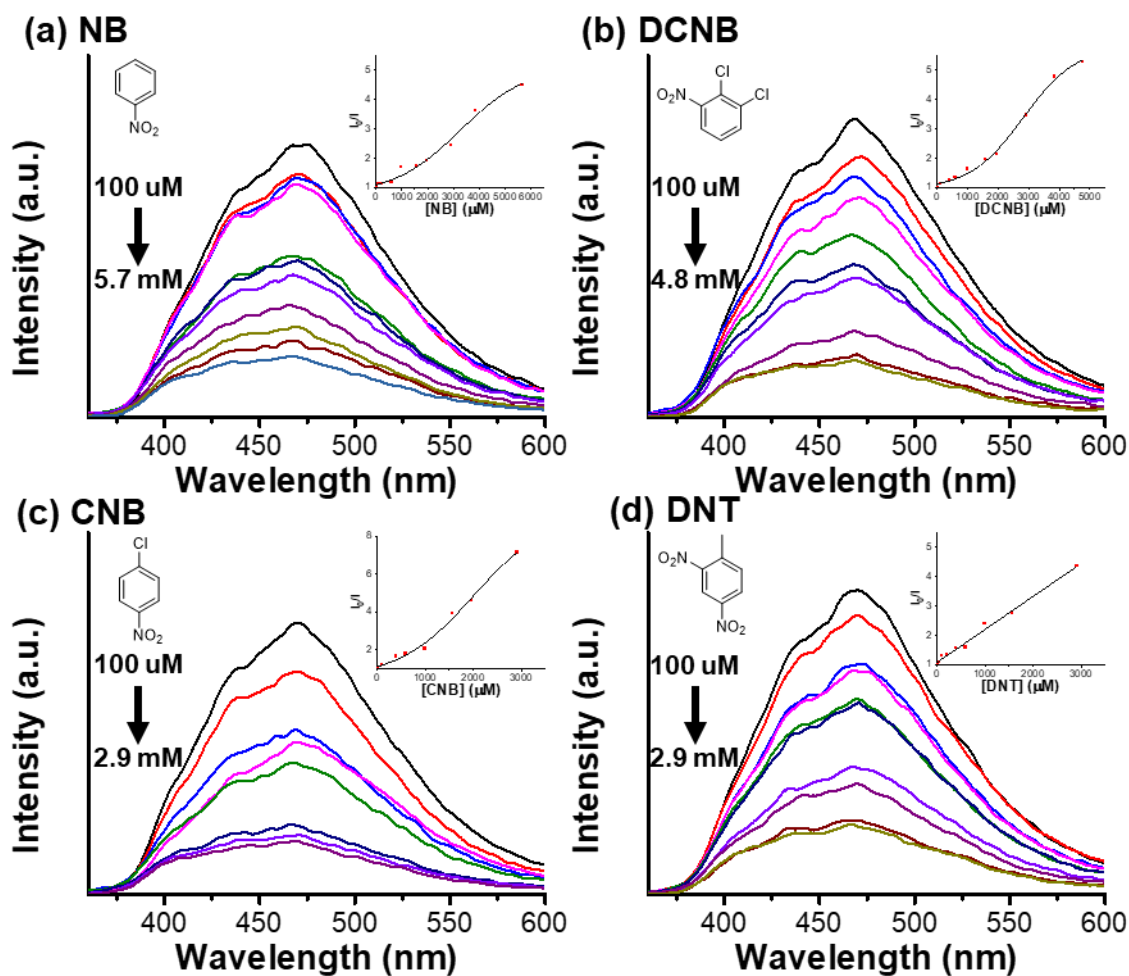
## Table of Contents

✓ <b>Figure S1.</b> FT-IR spectra of <b>BH-CMP</b> and <b>ABH-CMP</b> .....	S-2
✓ <b>Figure S2.</b> Solid-state <sup>13</sup> C CP/MAS NMR of <b>BH-CMP</b> and <b>ABH-CMP</b> .....	S-2
✓ <b>Figure S3.</b> Powder X-ray diffraction patterns of <b>BH-CMP</b> and <b>ABH-CMP</b> .....	S-3
✓ <b>Figure S4-6.</b> Photoluminescence emission spectra of <b>CMPs</b> suspension with different concentrations of NACs.....	S-4
✓ <b>Table S1.</b> Limit of Detection of <b>CMPs</b> for NACs .....	S-7

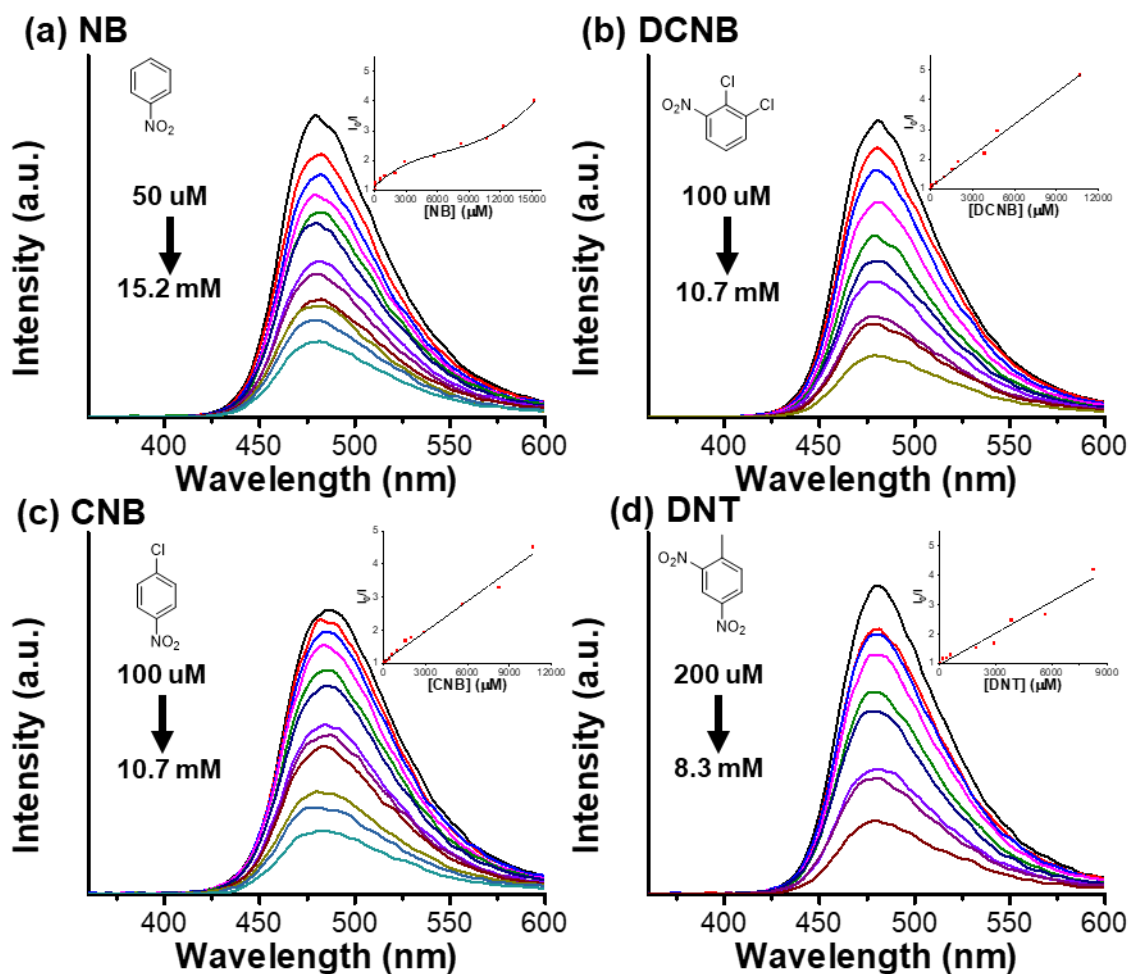




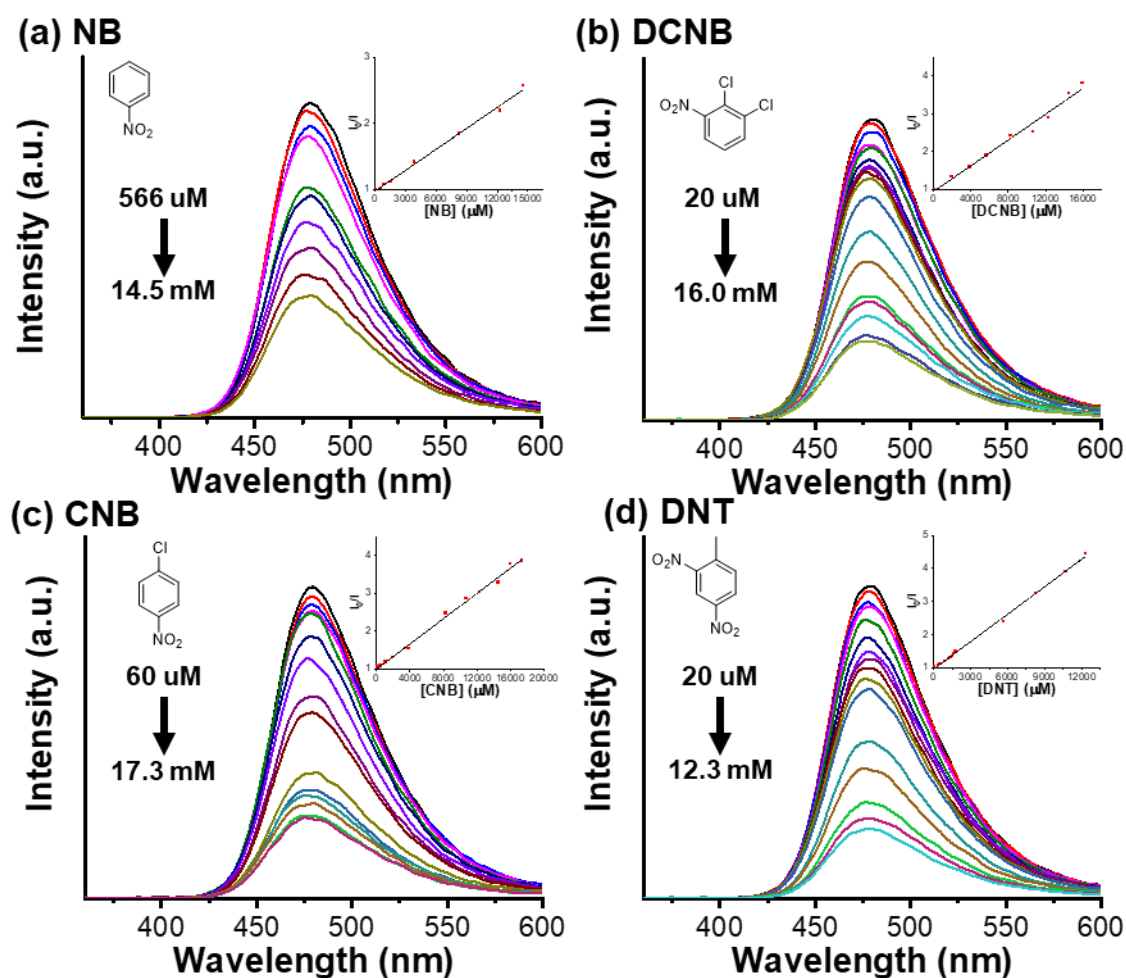
**Figure S3:** Powder X-ray diffraction patterns of (a) **BH-CMP** and (b) **ABH-CMP**.



**Figure S4:** The photoluminescence emission spectra of **BH-CMP** suspension in the DMF/H<sub>2</sub>O (40/60; v/v) with different concentrations of NACs. (a) nitrobenzene, (b) 2,3-dichloronitrobenzene, (c) 1-chloro-4-nitrobenzene, and (d) 2,4-dinitrotoluene. Plots of relative PL intensity ( $I_0/I$ ) versus concentration of NACs with **BH-CMP** suspension in the DMF/H<sub>2</sub>O (40/60; v/v) are provided in inset ( $I$  = PL intensity,  $I_0$  = PL intensity at NACs concentration of 0 M)



**Figure S5:** The photoluminescence emission spectra of **ABH-CMP** suspension in the DMF/H<sub>2</sub>O (40/60; v/v) with different concentrations of NACs. (a) nitrobenzene, (b) 2,3-dichloronitrobenzene, (c) 1-chloro-4-nitrobenzene, and (d) 2,4-dinitrotoluene. Plots of relative PL intensity ( $I_0/I$ ) versus concentration of NACs with **ABH-CMP** suspension in the DMF/H<sub>2</sub>O (40/60; v/v) are provided in inset ( $I$  = PL intensity,  $I_0$  = PL intensity at NACs concentration of 0 M)



**Figure S6:** The photoluminescence emission spectra of **ABH-CMP** suspension in the DMF with different concentrations of NACs. (a) nitrobenzene, (b) 2,3-dichloronitrobenzene, (c) 1-chloro-4-nitrobenzene, and (d) 2,4-dinitrotoluene. Plots of relative PL intensity ( $I_0/I$ ) versus concentration of NACs with **ABH-CMP** suspension in the DMF are provided in inset ( $I$  = PL intensity,  $I_0$  = PL intensity at NACs concentration of 0 M)

**Table S1.** Limit of Detection (LOD) of CMPs for NACs.

	<b>B-CMP 60</b>	<b>A-CMP 0</b>	<b>A-CMP 60</b>
<b>TNT</b>	3.48 $\mu$ M	8.78 $\mu$ M	29.1 $\mu$ M
<b>NB</b>	103 $\mu$ M	243 $\mu$ M	15.3 $\mu$ M
<b>DCNB</b>	213 $\mu$ M	408 $\mu$ M	151 $\mu$ M
<b>CNB</b>	47.8 $\mu$ M	9.94 $\mu$ M	23.6 $\mu$ M
<b>DNT</b>	30.5 $\mu$ M	2.24 $\mu$ M	202 $\mu$ M