

## Electronic Supplementary Information (ESI)

# Effect of inorganic/organic dual dielectric layer on the morphology and performance of n-channel OFETs

Anamika Kalita,<sup>a</sup> Anamika Dey,<sup>a</sup> and Parameswar Krishnan Iyer<sup>a,b\*</sup>

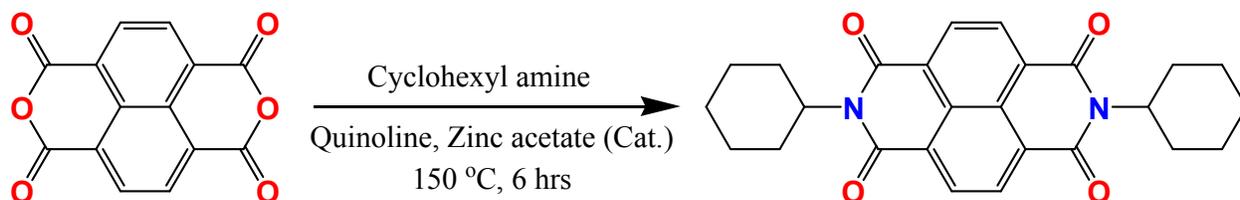
<sup>a</sup>Centre for Nanotechnology and <sup>b</sup>Department of Chemistry, Indian Institute of Technology  
Guwahati, Guwahati–781039, Assam, India.

\*Corresponding Author: [pki@iitg.ernet.in](mailto:pki@iitg.ernet.in)

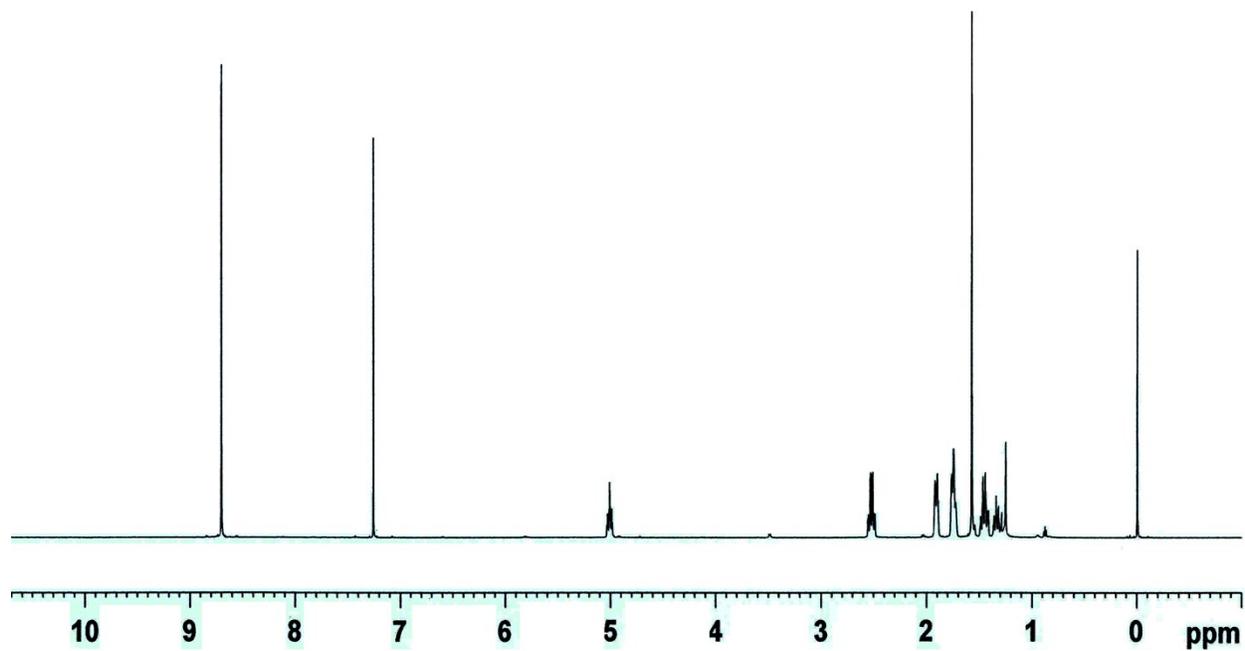
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**1. Synthetic Procedure:** A mixture of 1, 4, 5, 8-Naphthalenetertacarboxylic dianhydride (0.5 g, 1.8 mmol), cyclohexylamine (1.10g, 11.16 mmol) and zinc acetate (25 mg) in 15 mL quinoline was heated at 150 °C for six hours. The reaction mixture was cooled to room temperature and diluted with several volumes of methanol. The resulting slurry was filtered; the collected solid was washed with methanol and dried in air. The crude product was then purified by column chromatography using hexane-chloroform as eluent. (Yield: 85%). <sup>1</sup>H-NMR (600 MHz, CDCl<sub>3</sub>) δ (ppm): 8.70 (s), 5.01 (m), 2.51 (m), 1.57 (s), 0.87 (t) ppm. <sup>13</sup>C-NMR (150 MHz, CDCl<sub>3</sub>) δ (ppm): 163.54, 131.03, 127.11, 54.64, 29.90, 26.68, 25.54.

**Scheme S1.** Synthesis of NDI-CY2

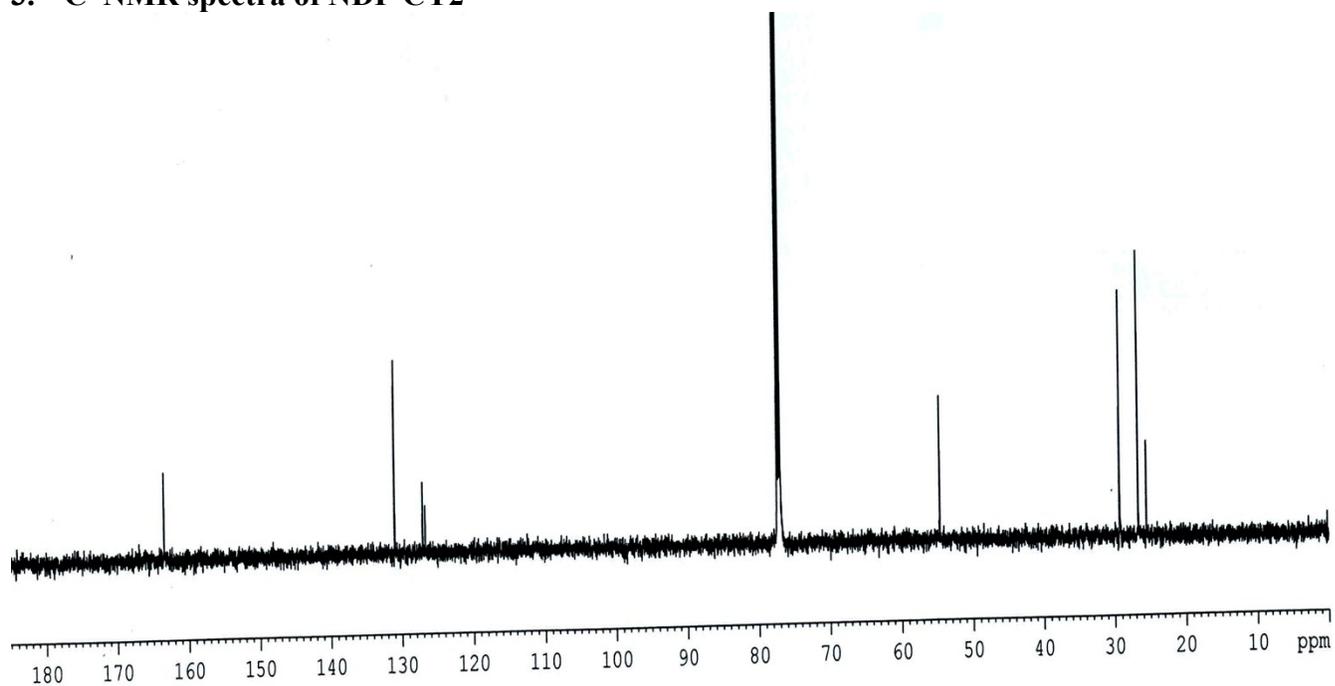


## 2. $^1\text{H}$ -NMR spectra of NDI-CY2



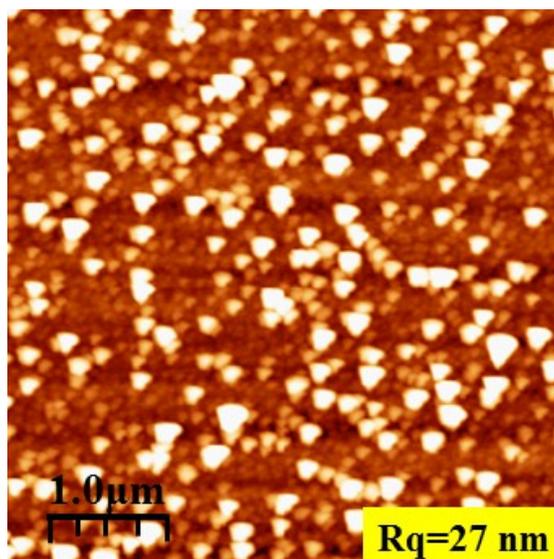
**Fig. S1**  $^1\text{H}$ -NMR Spectra of NDI-CY2 in  $\text{CDCl}_3$  (600 MHz)

## 3. $^{13}\text{C}$ -NMR spectra of NDI-CY2



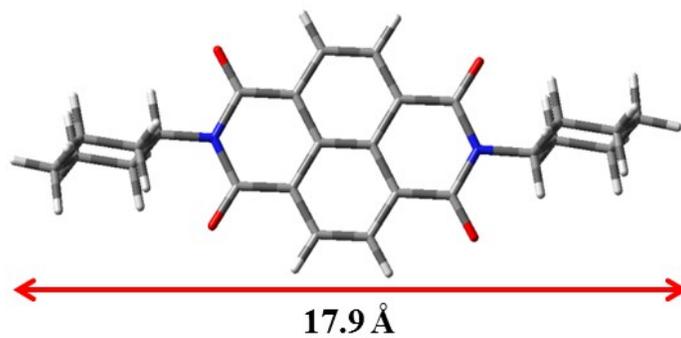
**Fig. S2**  $^{13}\text{C}$ -NMR Spectra of NDI-CY2 in  $\text{CDCl}_3$  (150 MHz)

#### 4. AFM image of anodized Al<sub>2</sub>O<sub>3</sub> layer



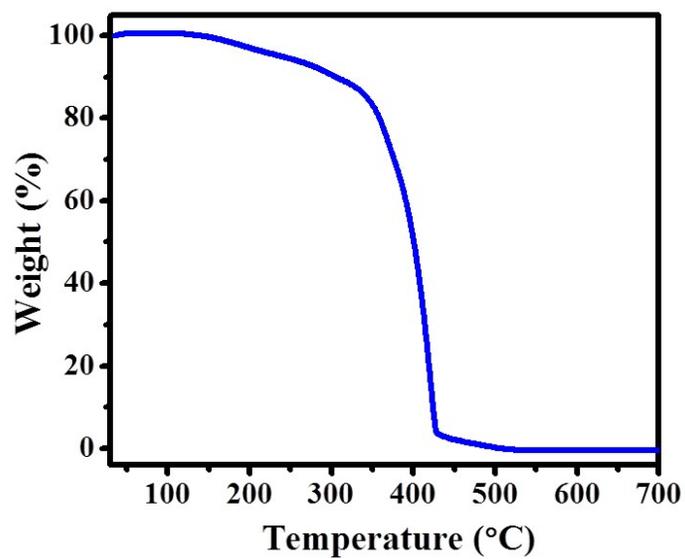
**Fig. S3** AFM image of anodized Al<sub>2</sub>O<sub>3</sub> layer. (Rq is the surface roughness)

#### 5. DFT calculated molecular length of NDI-CY2



**Fig. S4** Molecular length of NDI-CY2 (17.9 Å) estimated from DFT calculation.

## 6. TGA graph of NDI-CY2



**Fig. S5** TGA graph of NDI-CY2 molecule under N<sub>2</sub> atmosphere at a heating rate of 10 °C/min.