

## Electronic Supplementary Information (ESI)

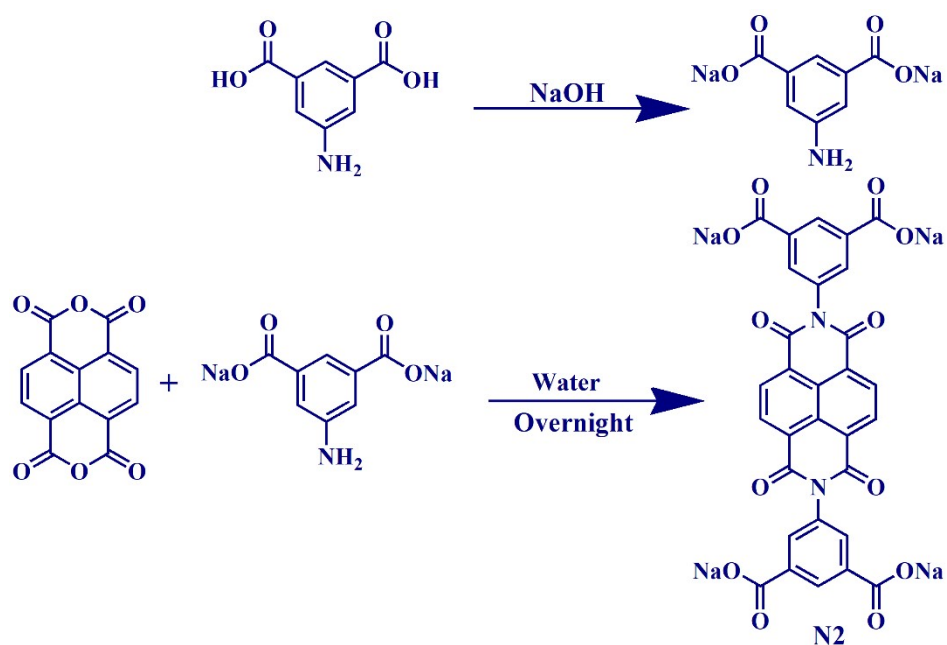
### Realization of Multi-Configurable Logic Gate Behaviour on Fluorescence Switching Signalling of Naphthalene Diimide Congeners

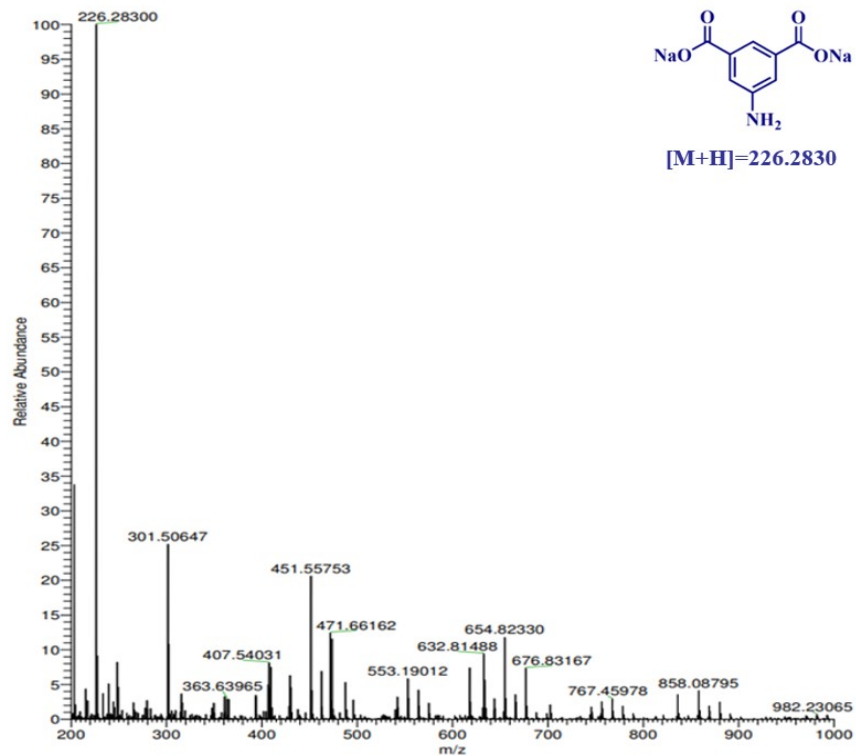
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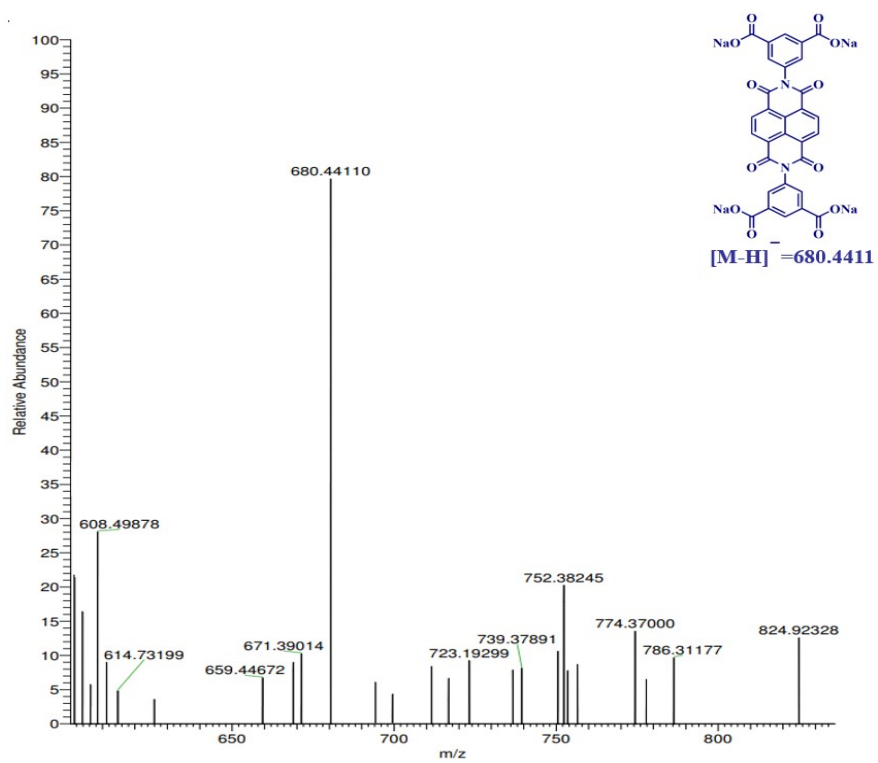
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#### Detailed Synthetic scheme of N2:





**Fig. S1** ESI-MS spectra of sodium salt of 5-amino isophthalic acid.



**Fig. S2** ESI-MS spectra of N2.

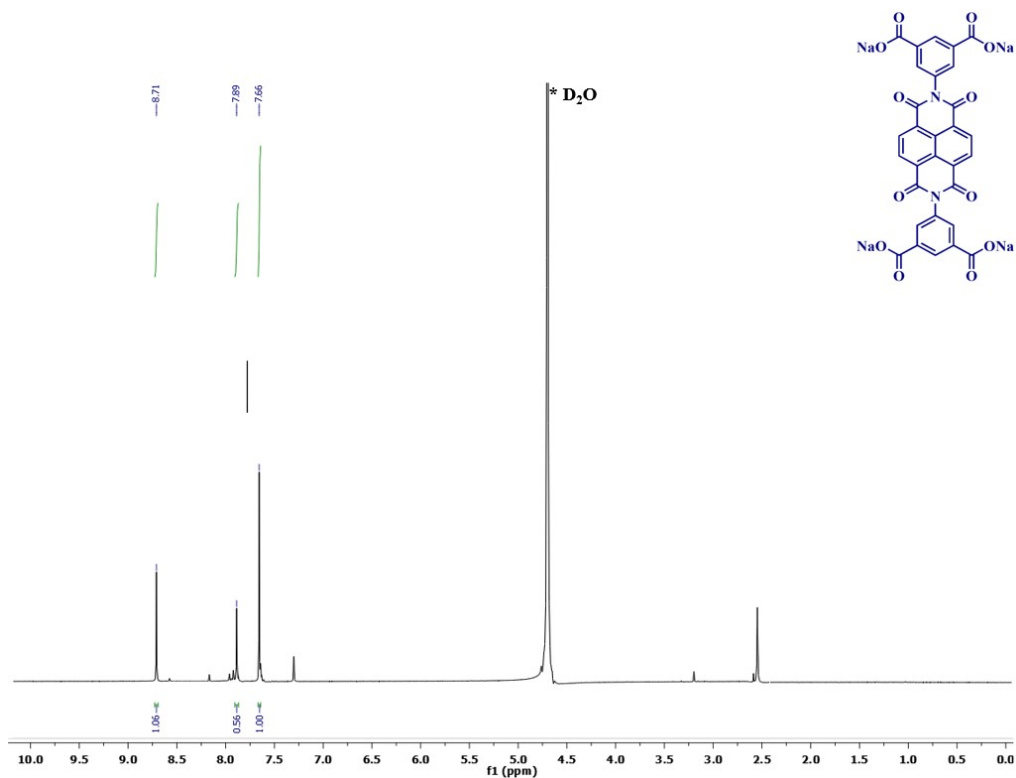


Fig. S3  $^1\text{H-NMR}$  ( $\text{D}_2\text{O}$ ) spectra of N2.

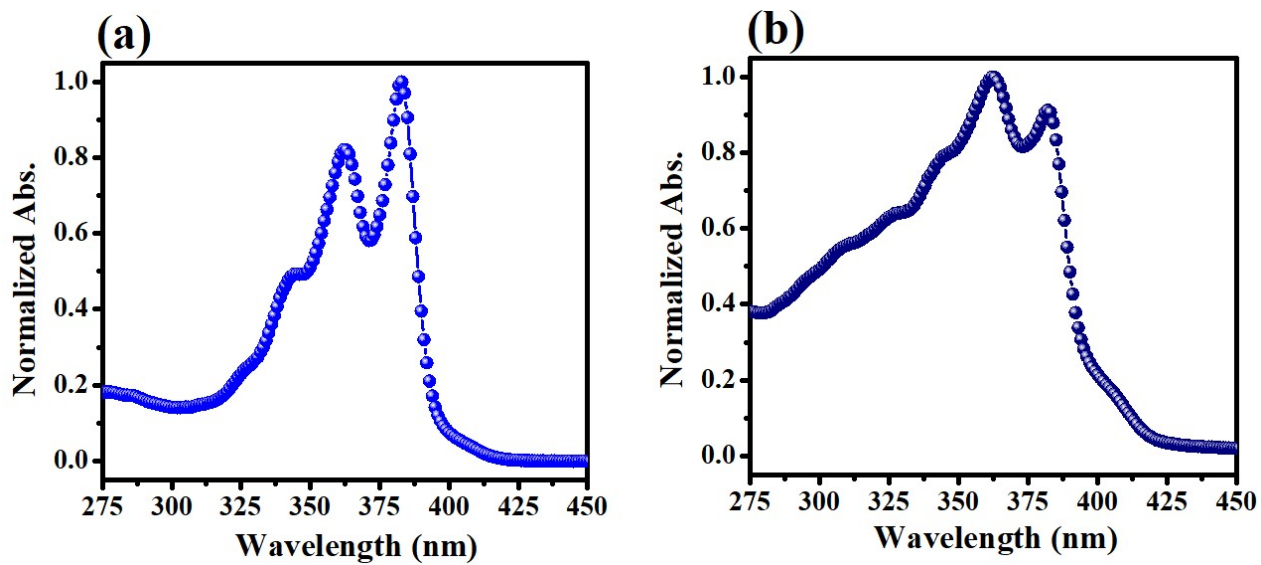
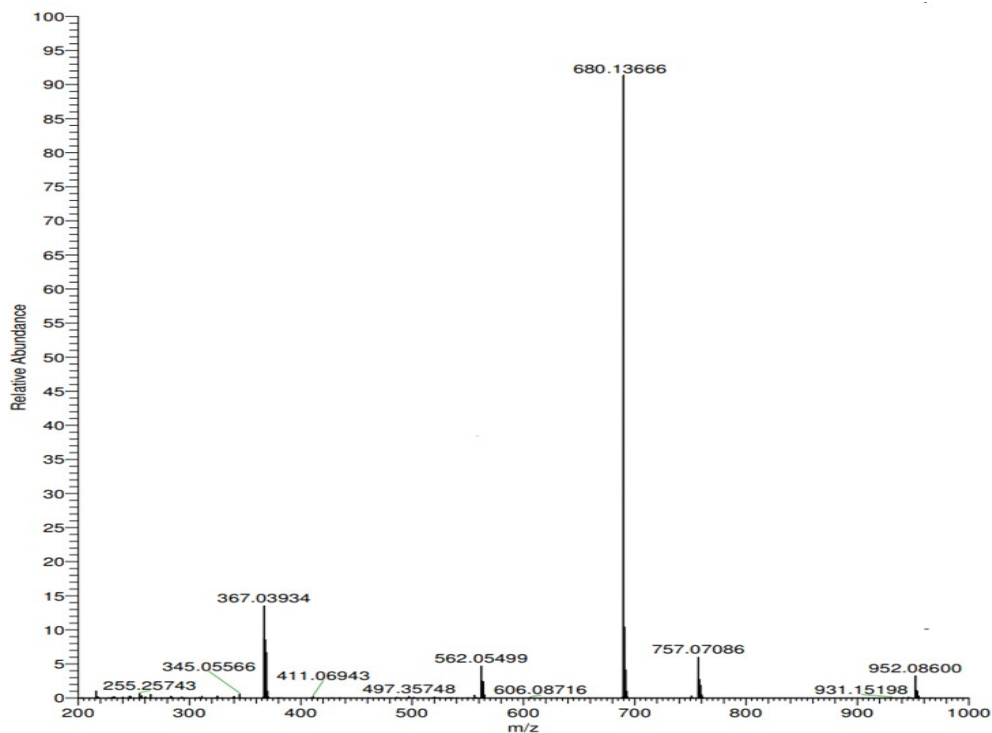
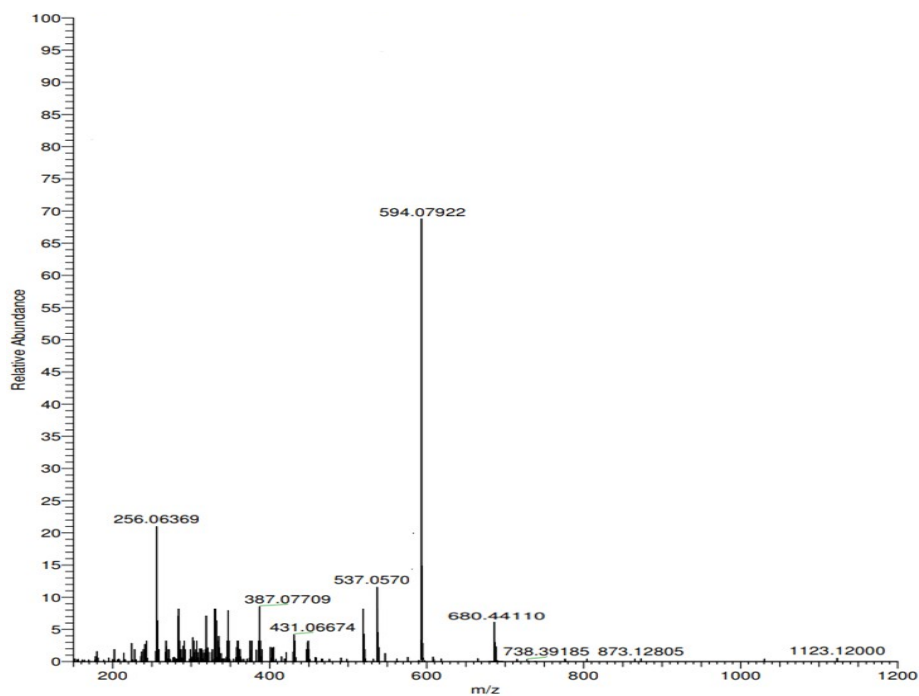


Fig. S4 Normalized absorption spectra of N1 (a) and N2 (b) in solution.

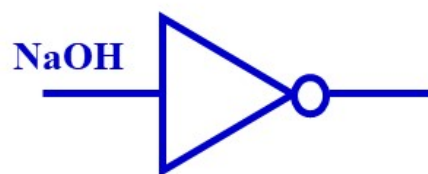




**Fig. S7** ESI-MS spectra of the product formed after addition of NaOH to N1.

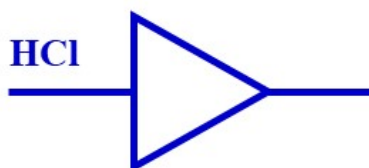


**Fig. S8** ESI-MS spectra of the product formed after addition of HCl to N2.



System	Input (NaOH)	Output (Emission intensity)
N1	0	1 (on)
	1	0 (off)

**Fig. S9** Representation of NOT logic gate and corresponding truth table obtained for N1.



System	Input (HCl)	Output (Emission intensity)
N2	0	0 (off)
	1	1 (on)

**Fig. S10** Representation of YES logic gate and corresponding truth table obtained for N2.