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# SUPPLEMENTARY MATERIAL

# The Fabrication of 2D Cu-Based MOF Nanosheets for DNA Detection

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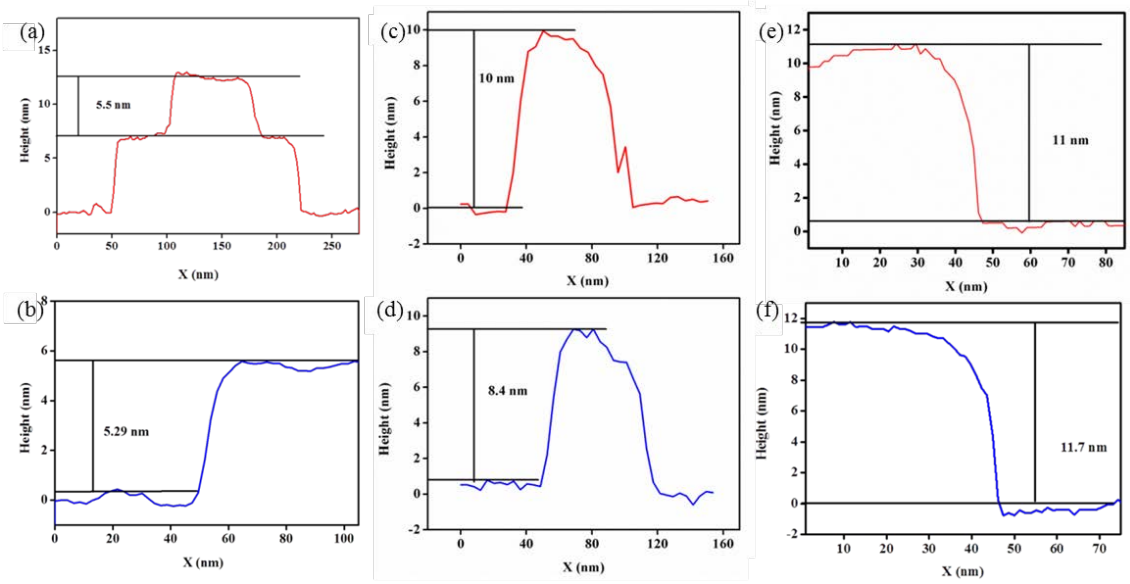


Figure S1. The AFM height profiles of (a, b) CuBDC, (c, d) Cu (2,6-NDC) and (e, f) Cu (1,4-NDC) nanosheets.

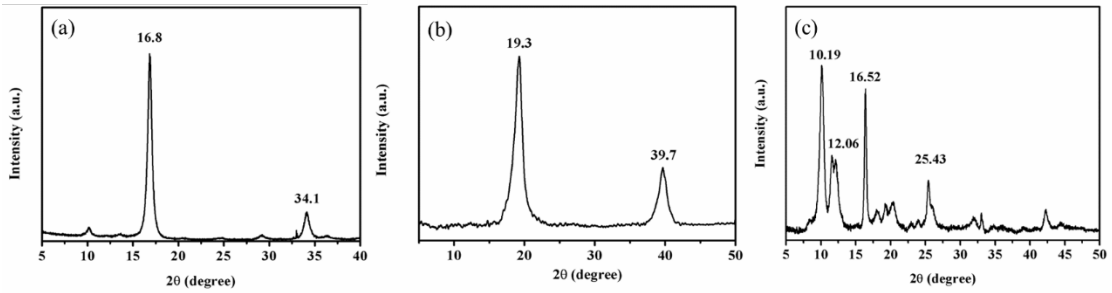


Figure S2. XRD patterns of (a) CuBDC, (b) Cu (2,6-NDC) and (c) Cu (1,4-NDC) nanosheets.

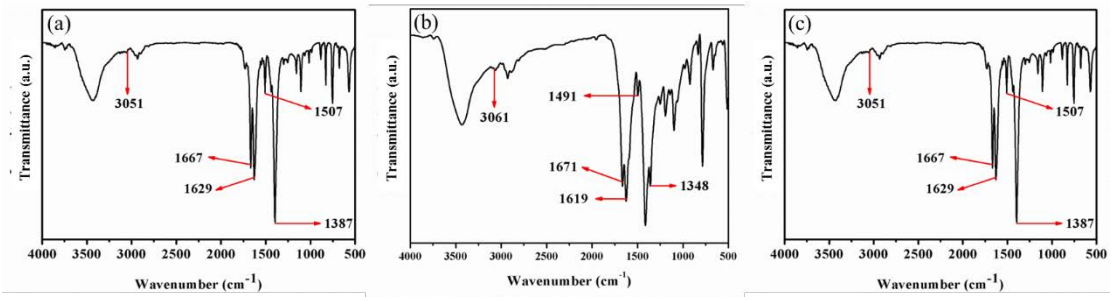


Figure S3. FT-IR spectra of (a) CuBDC, (b) Cu (2,6-NDC) and (c) Cu (1,4-NDC) nanosheets.

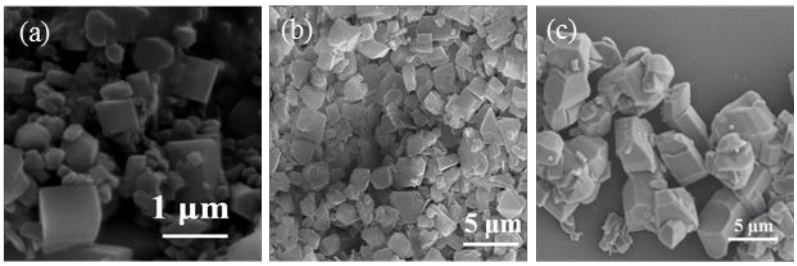


Figure S4. SEM images of (a) CuBDC, (b) Cu (2,6-NDC) and (c) Cu (1,4-NDC) bulky crystals.

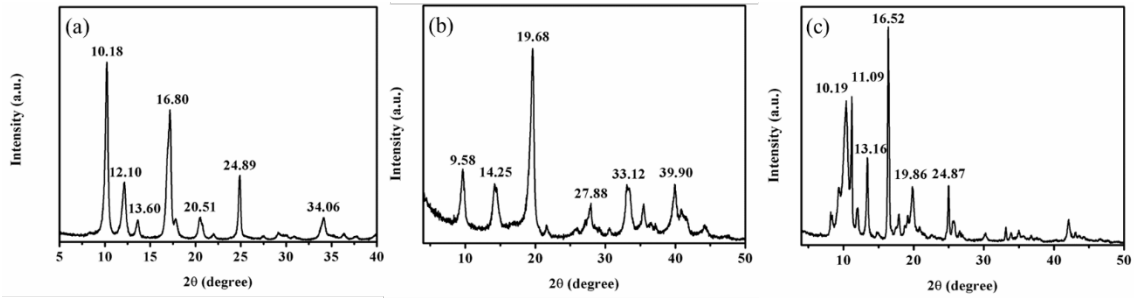


Figure S5. XRD patterns of (a) CuBDC, (b) Cu (2,6-NDC) and (c) Cu (1,4-NDC)

bulky crystals.

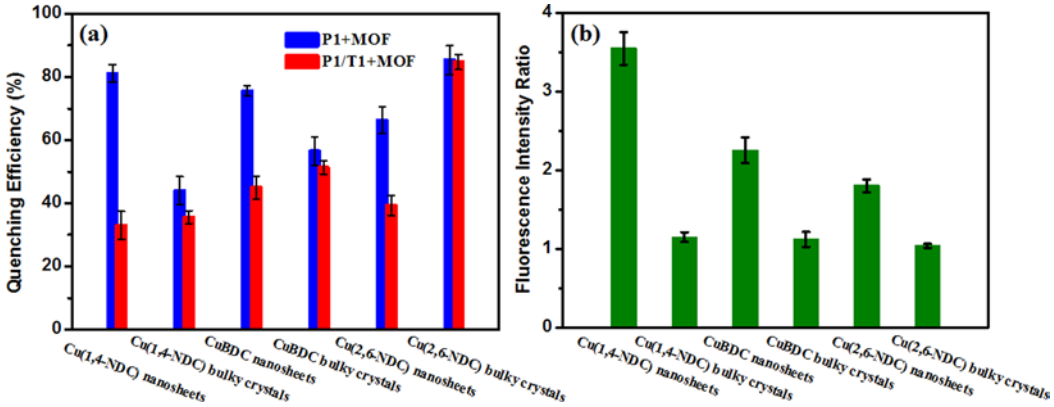


Figure S6. The (a) quenching efficiencies and (b) fluorescence intensity ratios of MOFs.

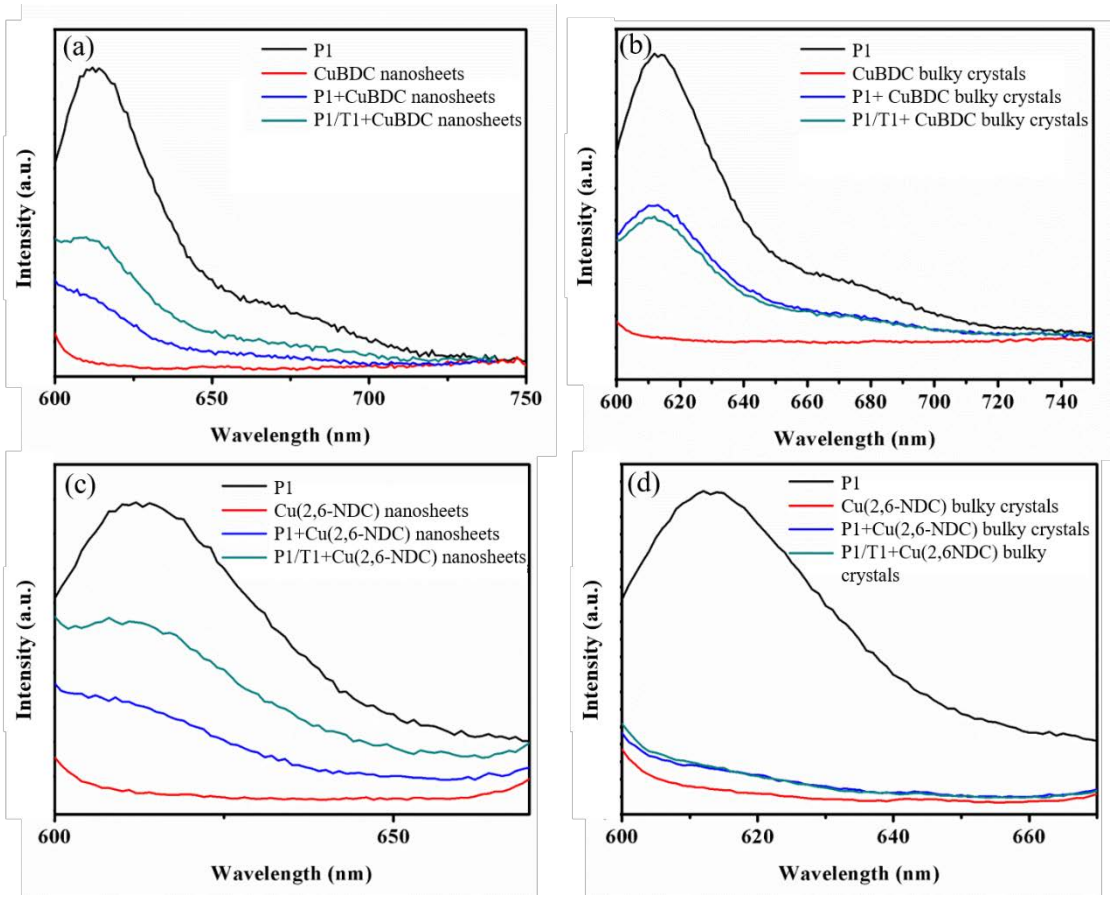


Figure S7. Fluorescence spectra of (a) CuBDC nanosheets, (b) CuBDC bulky crystals, (c) Cu(2,6-NDC) nanosheets and (d) Cu(2,6-NDC) bulky crystals at different experimental condition.

Table S1. Summary of linear ranges and detection limits for DNA fluorescence detection.

| Nanomaterials | Fluorescent | Linear range | Detection limit | Reference |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| GO | FAM | - | 2 nM | Angew. Chem. Int. Ed. 2009, 26, 4879 |
| GO | Silver | - | 0.5 nM | J. Am. Chem. Soc.2013, 135, 32, 11832 |
| $MoS_2$ | FAM | 0-15 nM | 0.5 nM | J. Am. Chem. Soc.2013, 135, 16, 5998 |
| Cu($H_2$dtoa) | FAM | 10-100 nM | 3 nM | Chem. Commun. 2013, 49, 1276. |
| UiO-66-$NH_2$ | FAM | - | 10 nM | Chem. commun. 2014, 50, 12069 |
| Cu-TCPP | Texas red | 1-5 nM | 0.02 nM | Adv. Mater. 2015, 27, 7372 |
| Cu-(1,4-NDC) | Texas Red | 0-20 nM | 0.3 nM | This work |
| Abbreviations: | FAM: carboxyfluorescein | | | |

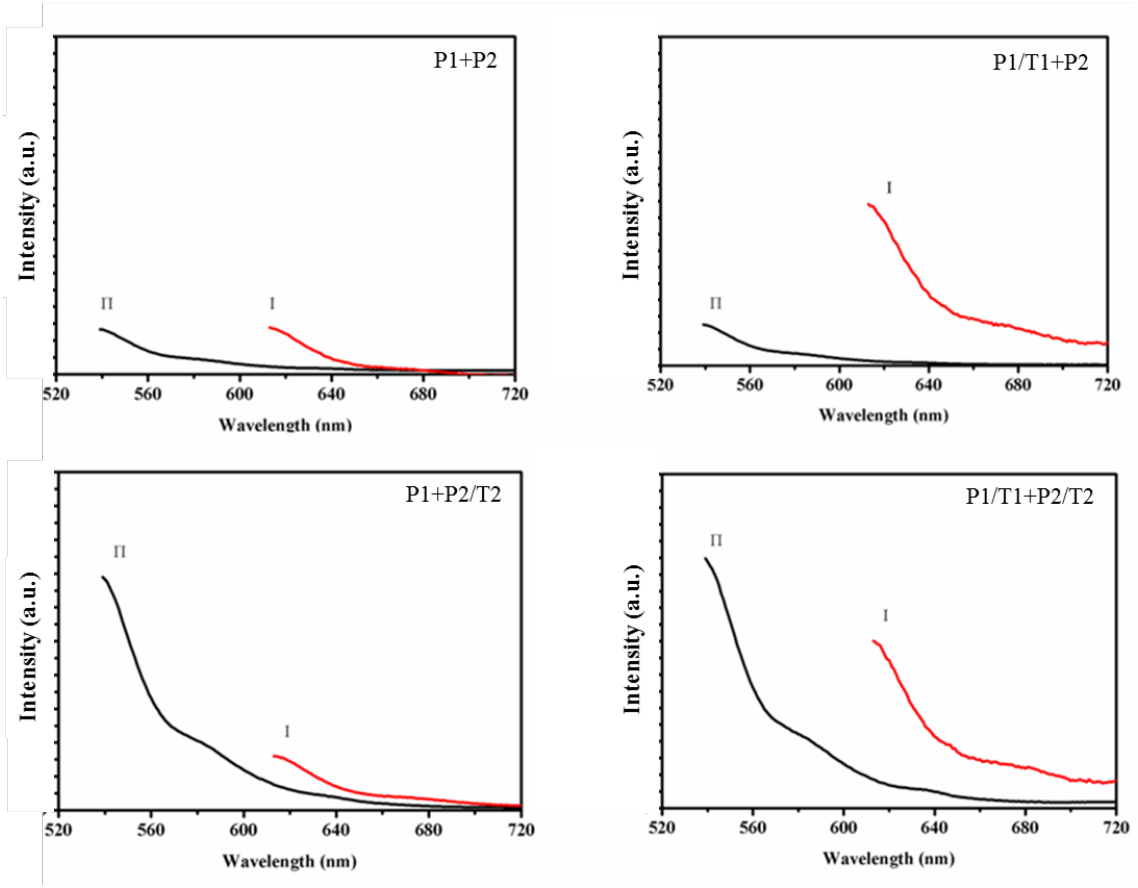


Figure S8. The fluorescence spectra of P1+P2 with or without different target DNA (T1 and T2) in the present of Cu(1,4-NDC) nanosheets.