Electronic Supplementary Material (ESI) for Faraday Discussions. This journal is © The Royal Society of Chemistry 2017

## **Supporting Information**

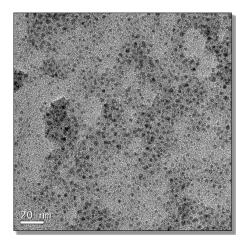
## Chiral self-assembly of fullerene clusters on CT-DNA templates

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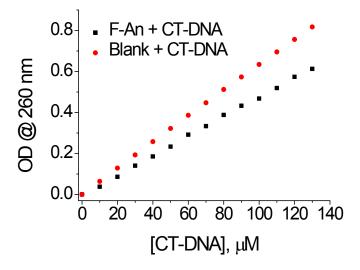
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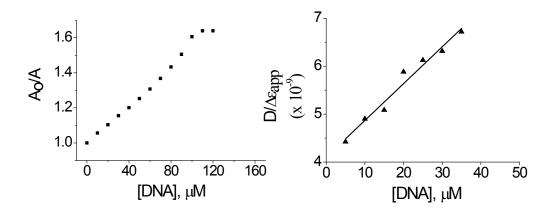
Sl. No.	Contents	Page
		No
1.	Figure S1 shows TEM image of <b>F-An</b> nanoclusters	1
2.	Figure S2 shows absorption changes at 260 nm in the presence and absence of <b>F-An</b> with increasing concentration of [CT-DNA].	1
3.	Figure S3 shows saturation plot and corresponding half reciprocal plot of <b>F-An</b> (3 μM) with increase in [CT-DNA]	2
4.	Figure S4 shows changes in the absorption and emission spectra of ethidium bromide (30 µM) in the presence of CT-DNA.	2
5.	Figure S5 shows the changes in the absorption and emission spectra of CT-DNA/ethidium bromide complex in the presence of <b>F-An</b>	3
6.	Figure S6 shows circular dichroism spectra of <b>F-Py</b> , <b>F-An</b> , <b>F-PTz</b> , CT-DNA/ <b>F-Py</b> and CT-DNA/ <b>F-PTz</b>	3
7.	Figure S7 shows temperature dependent CD spectral profile of CT-DNA/ <b>F-An</b>	4
8.	Figure S8 shows AFM height image of CT-DNA/ <b>F-An</b> and <b>F-PTz</b> alone	4
9.	Figure S9 shows EDAX measured over nanonetwork from dsDNA/F-An (1:1) showing corresponding peaks arising from the phosphorous and oxygen atoms of CT-DNA backbone.	4



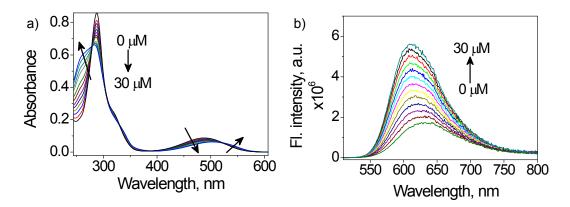
*Figure S1.* TEM image of **F-An** nanoclusters in 10% DMSO-PBS showing more or less uniform, 3-5 nm sized spherical nanoclusters.



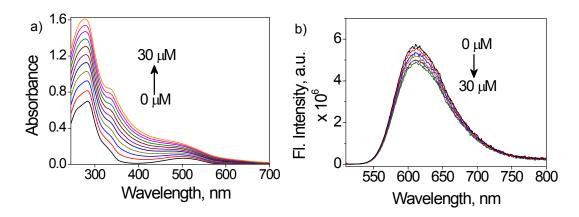
*Figure S2.* Absorption changes at 260 nm in the presence and absence of **F-An** with increasing concentration of [CT-DNA]. CT-DNA was added in small aliquots to a 10% DMSO-PBS solution of **F-An** nanoclusters or to a 10% DMSO-PBS solution blank.



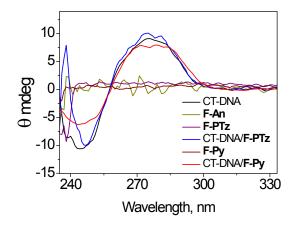
*Figure S3.* a) Saturation plot of absorption changes at 336 nm upon addition of CT-DNA to **F-An** (3 μM) and b) corresponding half reciprocal plot with increase in [CT-DNA].



*Figure S4.* Changes in the a) absorption spectra and b) emission spectra of ethidium bromide (30  $\mu$ M) in the presence of increasing concentrations of CT-DNA.



*Figure S5.* Changes in the a) absorption spectra and b) emission spectra of CT-DNA/ethidium bromide complex (30  $\mu$ M/ 30  $\mu$ M, 1:1) in the presence of increasing concentrations of **F-An**.



*Figure S6.* Circular dichroism spectra of **F-Py**, **F-An**, **F-PTz**, CT-DNA/**F-Py** (1:1) and CT-DNA/**F-Ptz** (1:1) in 10% DMSO-PBS. These control experiments confirm that only **F-An** with unique cluster size can undergo templated self-assembly with CT-DNA.

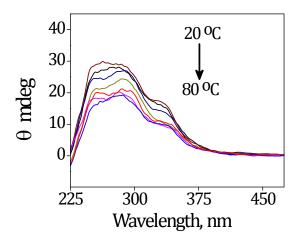


Figure S7. Temperature dependent CD spectral profile of CT-DNA/F-An (1:1) from 20 °C to 80 °C.

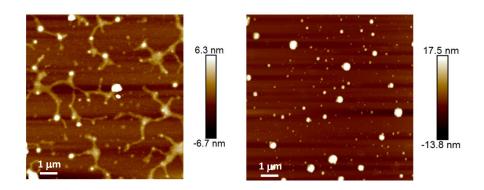
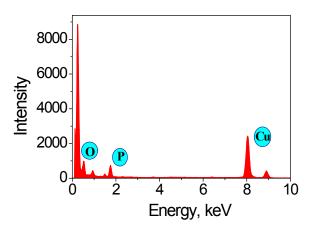


Figure S8. AFM height image of a) CT-DNA/F-An and b) F-PTz alone.



*Figure S9.* EDAX measured over nanonetwork from dsDNA/F-An (1:1) showing corresponding peaks arising from the phosphorous and oxygen atoms of CT-DNA backbone.