Supporting Information for:

Novel Fluorescent Organic Nanoparticles as Label-free Biosensor for Dopamine in Serum

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Fig. S1. PL spectrum of C2-F127 FONs in aqueous solution. Inset illustrates the photo-stability of the FONs over a period of 10000 s.

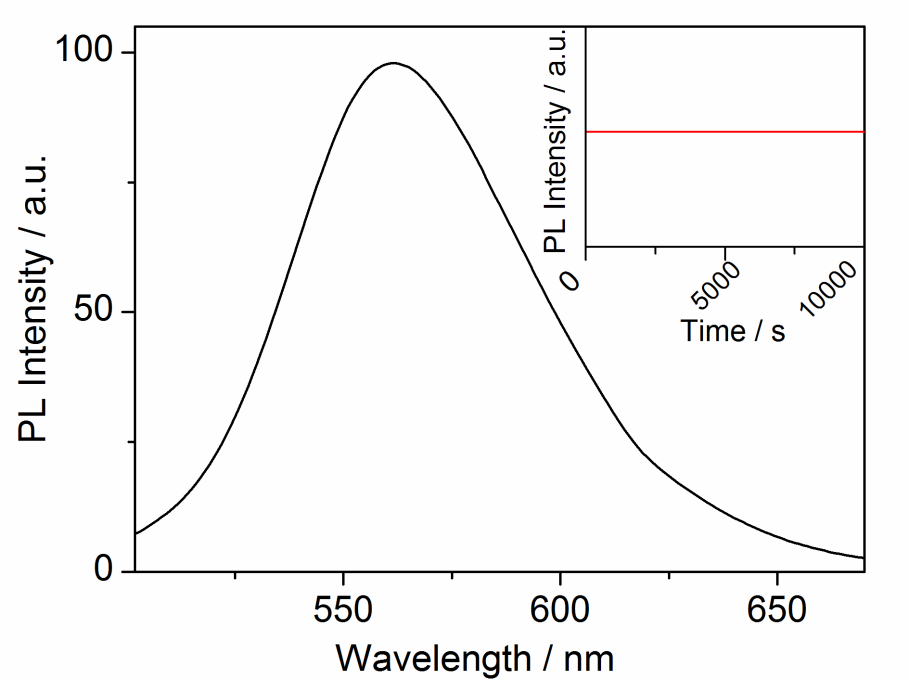
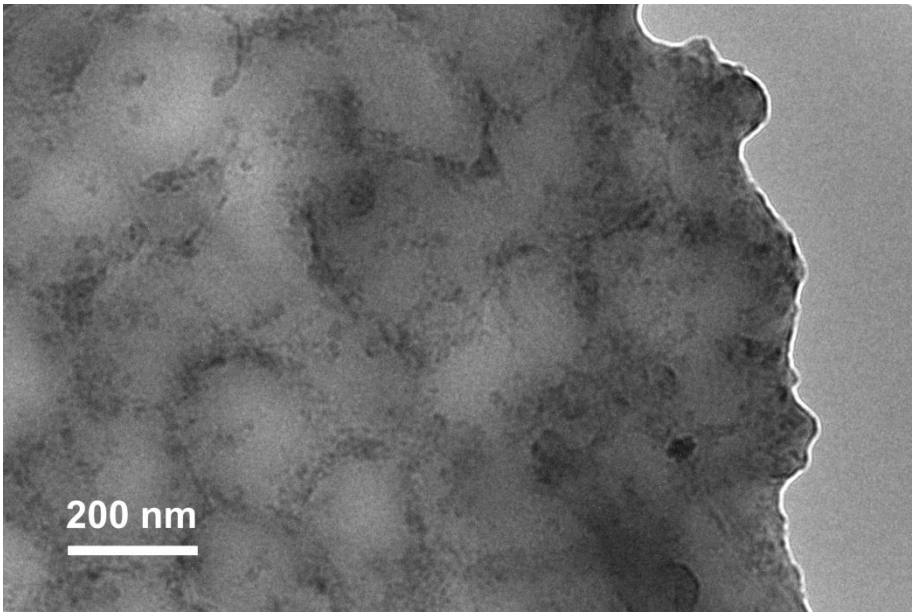


Fig. S2. TEM image of the aggregated C2-F127@PDA after centrifugation treatment.



Calculaton of the detection limit.[S1]

To calculate the limit of detection (LoD), the limit of blank (LoB) is first calculated. LoB is the highest apparent analyte concentration expected to be found when replicates of a blank sample containing no analyte are tested.

$$\mathrm{LoB} = \mathrm{mean}_{blank} + 1.645(\mathrm{SD}_{blank}) \qquad (1)$$

The mean_{blank} is the mean of the blank and SD_{blank} is the standard deviation of the blank. The SD_{blank} is calculated to be 0.0016 and the mean_{blank} is 0.026 μM. Therefore, the LoB is calculated to be 0.029 μM from eqn (1).

LoD is the lowest analyte concentration likely to be reliably distinguished from the LoB and at which detection is feasible.

$$\mathrm{LoD} = \mathrm{LoB} + 1.645\left(\mathrm{SD}_{low\ concentration\ sample}\right) \qquad (2)$$

The $\mathrm{SD}_{low\ concentration\ sample}$ is calculated to be 0.0034. The LoD is thus calculated to be 0.035 μM from eqn (2).

The limit of quantification (LoQ) can be defined as the lowest concentration of a sample that can still be quantified with acceptable precision and accuracy. The acceptance criteria in this "turn-off" fluorescence sensor for the two parameters at LoQ are less than 2% for precision and 2% bias for accuracy. Therefore, the LoQ is calculated to be 100 nM in this work.

Reference.

S1. D. A. Armbruster and T. Pry, *Clin. Biochem. Rev.*, 2008, **29**, S49-S52.