Electronic Supplementary Material (ESI) for Nanoscale Advances.

Supporting Information for

Unveiling the photoluminescence dynamics of gold nanoclusters with fluorescence correlation spectroscopy

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Contents:

S1. TCSPC decays of background

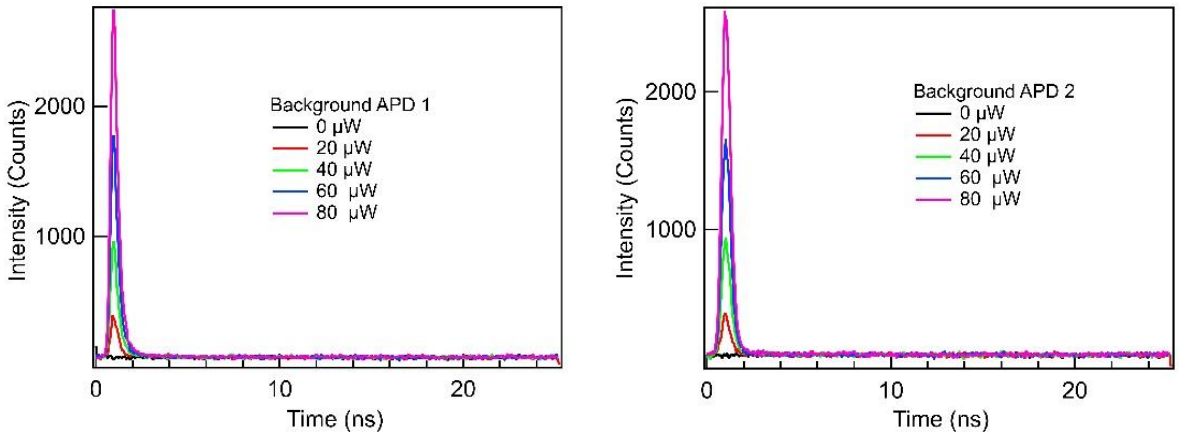

Figure S1. TCSPC measurement of D_2O background at different powers. Here the fluorescence intensity counts in the first 2 ns are mainly due to laser-induced backscattering and Raman scattering. Hence we time gate intensity counts at the first 2 ns to remove the scattering peak and reduce the background.

S2. Comparison of FCS fitting with and without the dark state blinking term

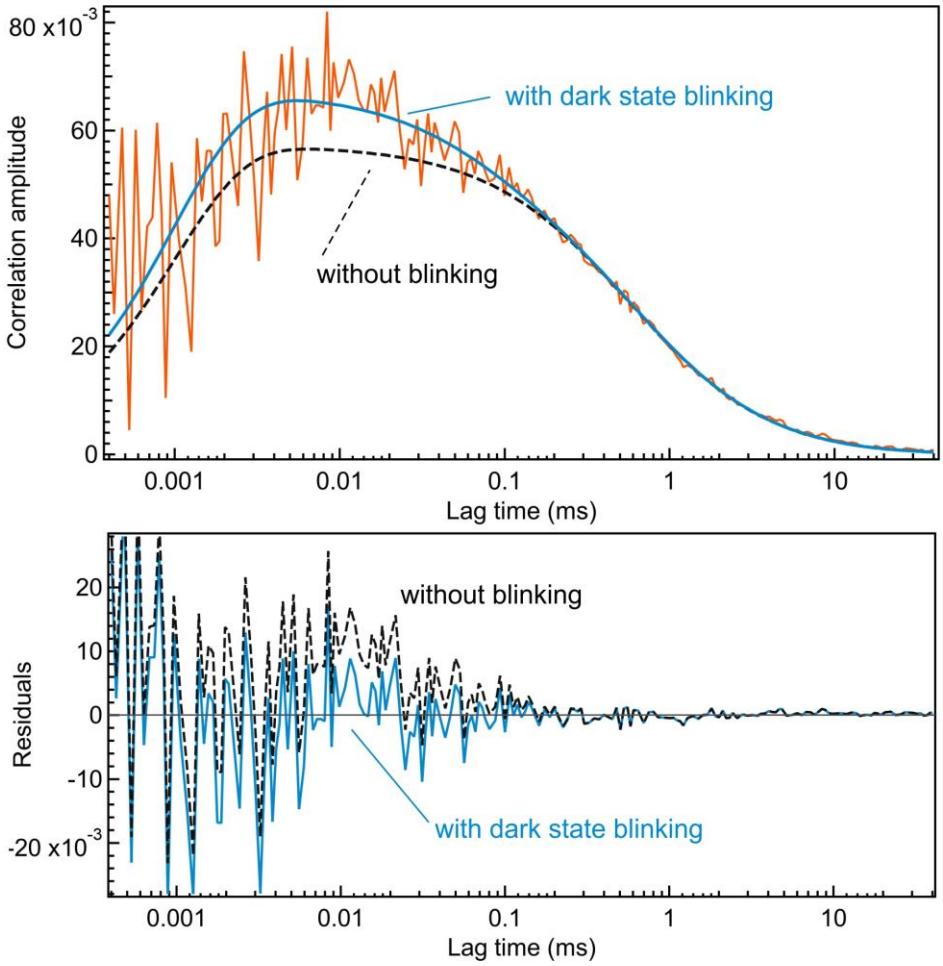

Figure S2. Comparison of FCS numerical fits with (solid blue line) and without (dashed gray line) including the term $\left(1+\frac{T_{DS}}{(1-T_{DS})}e^{\left(\frac{-t}{\tau_{DS}}\right)}\right)$ accounting for the dark state blinking. The lower graph shows the fit residuals. The excitation power is 30 µW.

S3. Supplementary FCS fit results

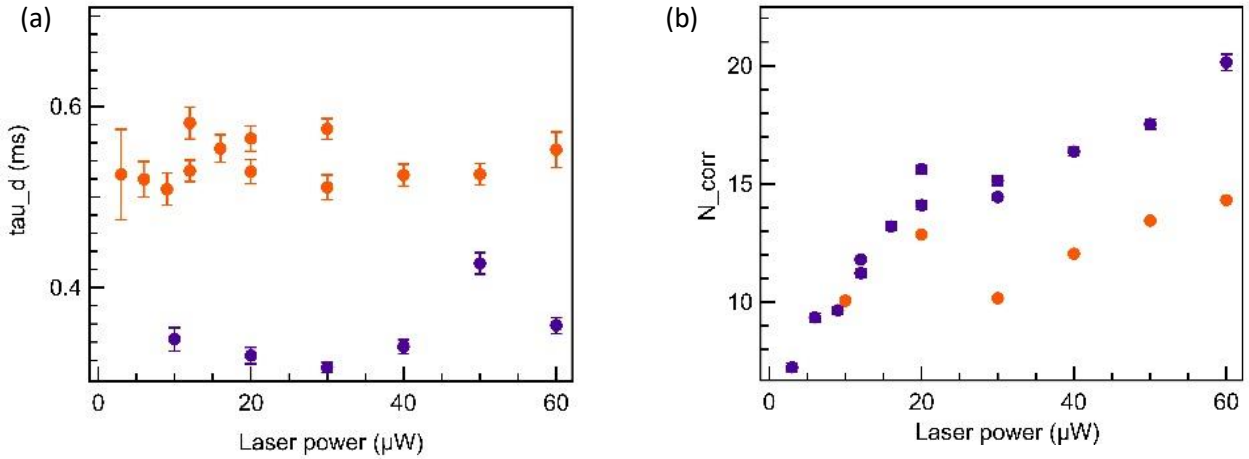

Figure S3. a) Diffusion time of $Au_{18}(SG)_{14}$ with/without PDA at different powers. b) Variation in the number of AuNC in the confocal detection volume N_{corr} with/without PDA with power.