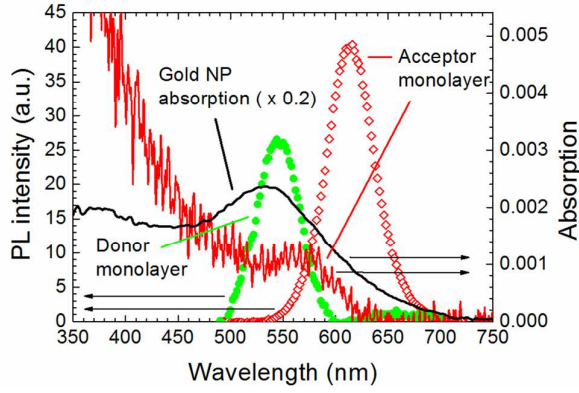SUPPORTING INFORMATION

Figure S1: Absorption and emission spectra of the materials used: gold NPs (absorption: black line), donor QDs (emission: solid green circles), acceptor QDs (absorption: red line, emission: open red diamonds).

Table S1: Different parameters determined for the sandwich structures with varying gold concentration (c_{Au}): donor QD concentration (c_{Don}), acceptor QD concentration (c_{Acc}); donor lifetime in the sandwich structure ($\tau_{Don,sandwich}$), donor lifetime in monolayer ($\tau_{Don,ML}$), donor lifetime on gold ($\tau_{Don,on\,gold}$), as well as FRET rate, $k_{FRET-theory}^{-1}$, and FRET efficiency $E_{FRET-theory}$ calculated with eq. (2) for a bilayer structure without gold NPs. For the calculation of $k_{FRET-theory}^{-1}$ the reference donor lifetime for the respective donor QD concentration in the sandwich structure as well as the actual acceptor concentration in the sandwich structure were taken into account, leading to a spread in the theoretically calculated $k_{FRET-theory}^{-1}$ for each sandwich structure.

c_{Au} $\left[10^{17}\,m^{-2}\right]$	c_{Don} $\left[10^{17}\,m^{-2}\right]$	c_{Acc} $\left[10^{17}\,m^{-2}\right]$	$\tau_{Don,sandwich}$ [ns]	$\tau_{Don,ML}$ [ns]	$\tau_{Don,on\,gold}$ [ns]	$k_{FRET-theory}^{-1}$ (c) [ns]	$E_{FRET-theory}$ [%]
0	2.4	0.67	0.61	0.61	-	494±222	0.12±0.06
0.026	2.0	0.71	0.62	0.65	0.63	496±222	0.13±0.06
0.063	2.1	0.59	0.53	0.64	0.58	588±268	0.11±0.05

1

0.086	1.8	0.63	0.49	0.68	0.59	585±265	0.12±0.05
0.092	2.0	0.76	0.45	0.65	0.57	464±206	0.14±0.06