

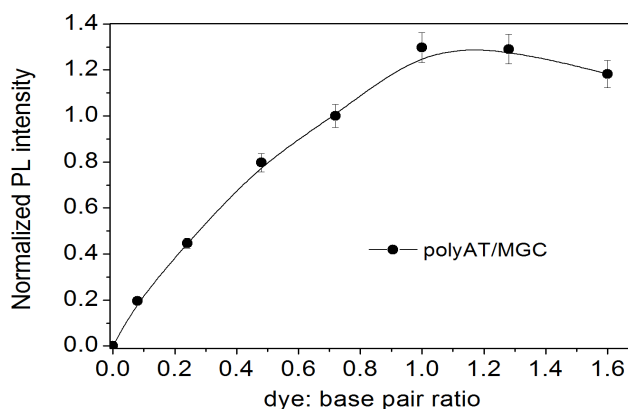
## Energy transfer from a cationic conjugated polyelectrolyte to a DNA photonic wire: towards label-free, sequence-specific DNA sensing

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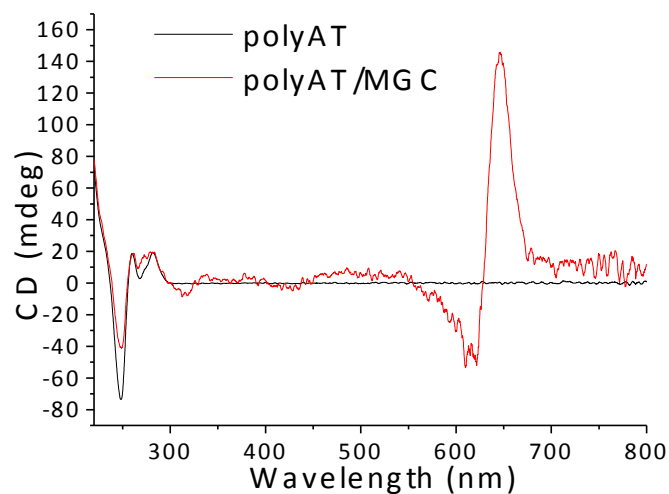
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### Calculation of data in Figure 6c main text.

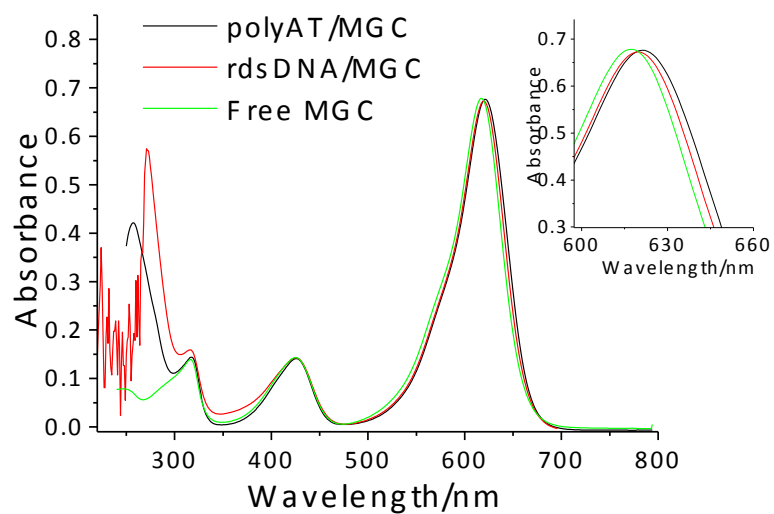
Calculation of FRET sensitized PL signal at 657 nm vs base pair mismatch shown in Figure 6c, main text, was performed by subtracting the PL signal @657nm from the PPV/rdsDNA complex considered as donor only component (Figure S6, SI) from the PL signal @657nm of the PPV/rdsDNA/MGC, with both spectra normalized at the PPV peak and for each bp mismatch in part.



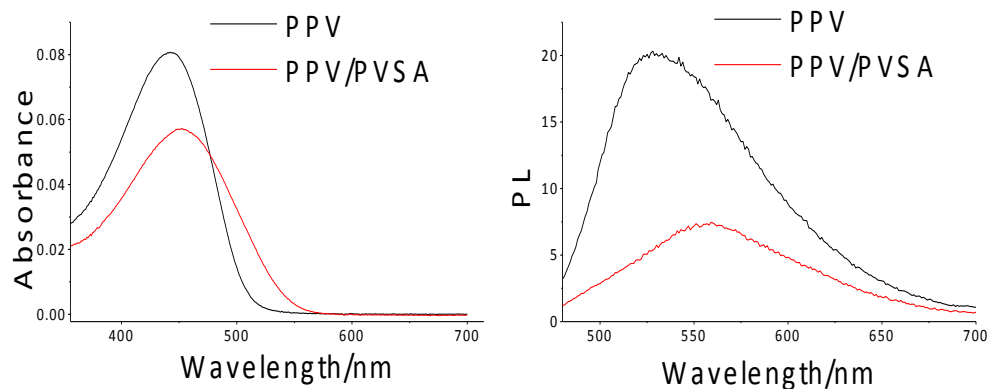
**Fig.S1** Photoluminescence titration for a 25 bp polyAT vs MGC dye load performed at 1 $\mu$ M polyAT in 10 mM phosphate buffered saline (PBS) buffer.



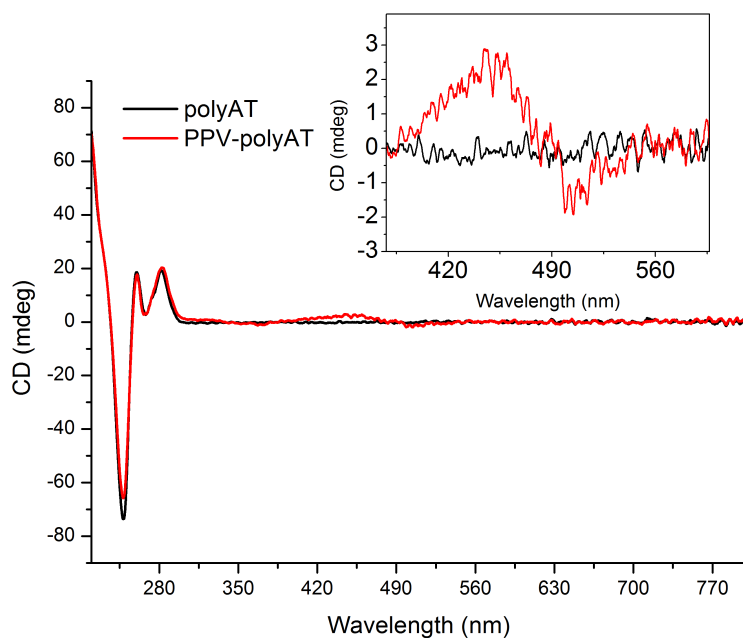
**Fig.S2.** CD spectrum of polyAT (black) and polyAT/MGC (red, 1:1 dye:bp ratio), each at a concentration of 5  $\mu$ M polyAT in 10 mM PBS buffer.



**Fig.S3** UV-Vis absorption spectra of free MGC (green), rdsDNA/MGC complex (red, 1:1 dye:bp ratio) and polyAT/MGC complex (black, 1:1 dye:bp ratio), all in 10 mM PBS buffer. rdsDNA and polyAT were at a concentration of 1  $\mu$ M. Inset: zoom of the low energy peak.



**Fig.S4.** UV-Vis absorption (left panel) and PL spectra (right panle) of PPV mixed with poly(vinylsulfonic acid, sodium salt) (PVSA, MW=4000-6000Da) at 1:1 molar ratio in 10 mM PBS (red color). Show in black are the absorption (left) and PL (right) spectra for PPV only. PPV and PVSA were at a concentration of 1  $\mu$ M.



**Fig.S5.** CD spectra of polyAT and PPV/polyAT complex . Each at a concentration of 5 $\mu$ M in 10mM PBS buffer.

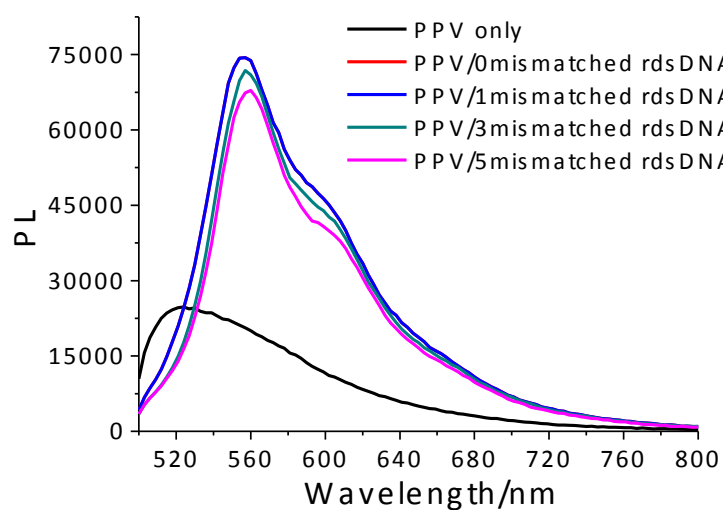


Fig.S6 PL spectrum for PPV/rdsDNA vs base-pair mismatch, with PPV and rdsDNA at 1  $\mu$ M concentration in 10 mM phosphate buffer. Shown in black is the PL spectrum of PPV only.

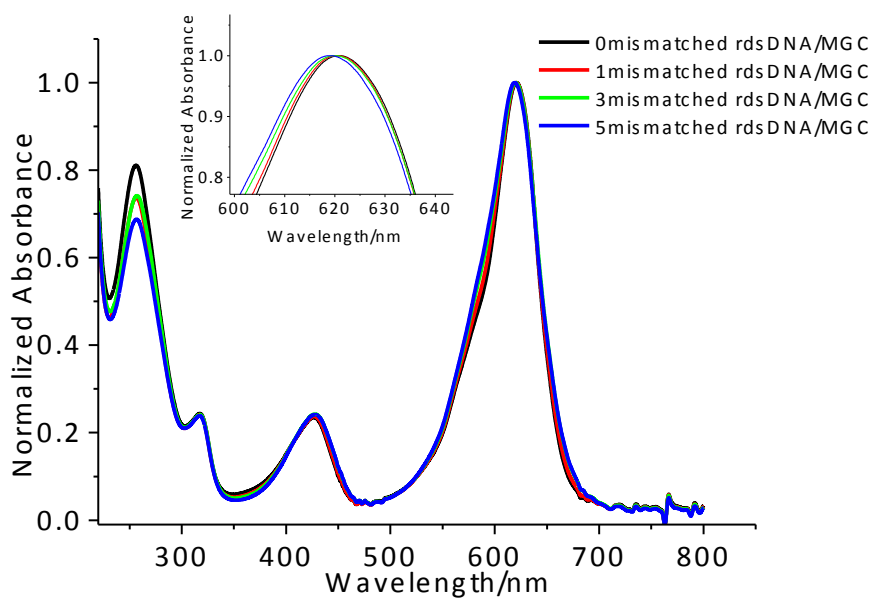


Fig.S7. Normalized UV-Vis spectra of rdsDNA/MGC complexes with various base-pair (bp) mismatches and intercalated at a 1:1 dye:bp load, with rdsDNA at a concentration of 1  $\mu$ M in 10 mM PBS buffer. Inset is a zoom of the low energy peak for all samples.