

Electronic Supplementary Information

Osmium-nitrido corroles as NIR indicators for oxygen sensors and triplet sensitizers for organic upconversion and singlet oxygen generation

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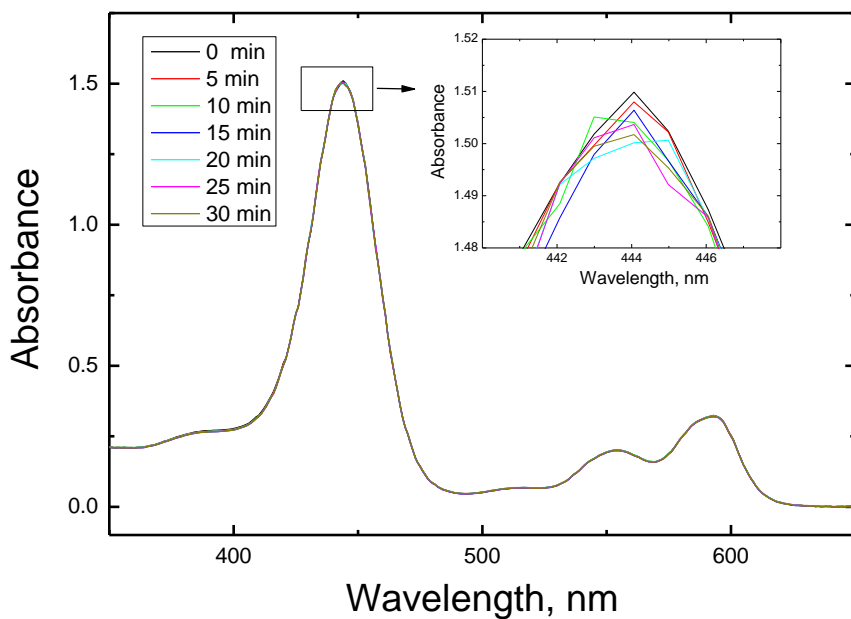


Figure S1. Absorption spectra of Os[TpCF₃PC](N) in air-saturated toluene upon irradiation with 590-nm high power LED array.

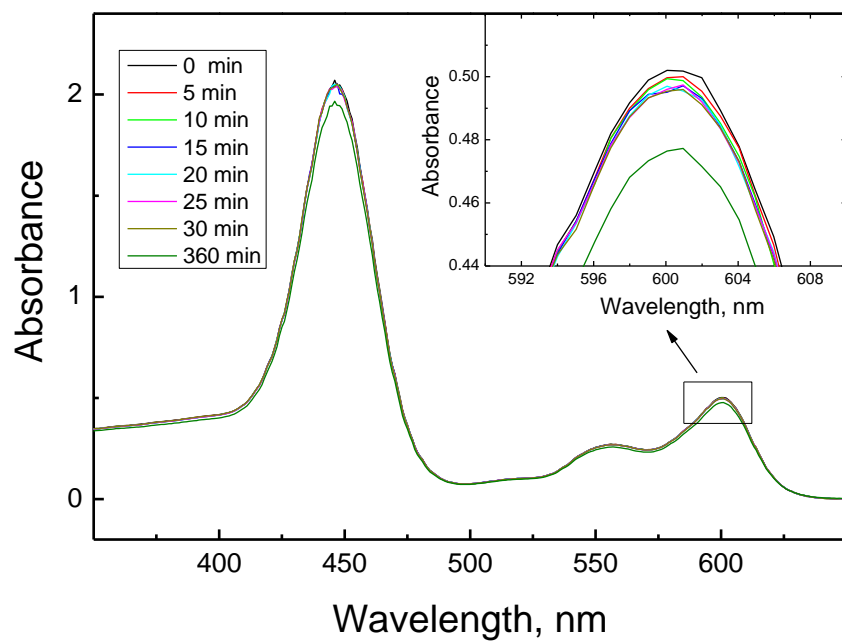


Figure S2. Absorption spectra of Os[TpOCH₃PC](N) in air-saturated toluene upon irradiation with 590-nm high power LED array.

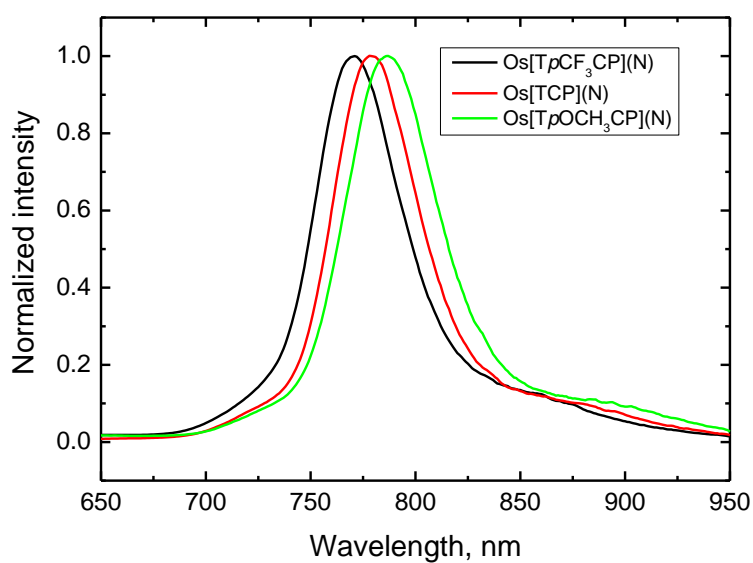


Figure S3. Emission spectra nitridoosmium(VI) corroles in polystyrene under nitrogen (25 °C, λ_{exc} 590 nm).

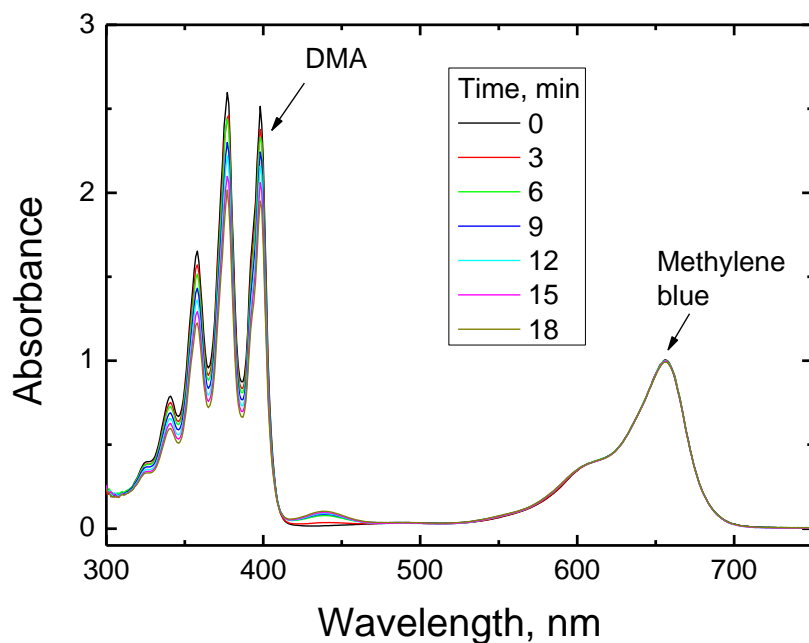


Figure S4. Bleaching of 9,10-dimethylanthracene (0.28 mM) in air saturated EtOH:THF (9:1) solution in presence of methylene blue (13.5 μM) upon excitation with orange light (595 ± 5 nm; photon flux $4000 \mu\text{mol}\cdot\text{s}^{-1}\cdot\text{m}^{-2}$).

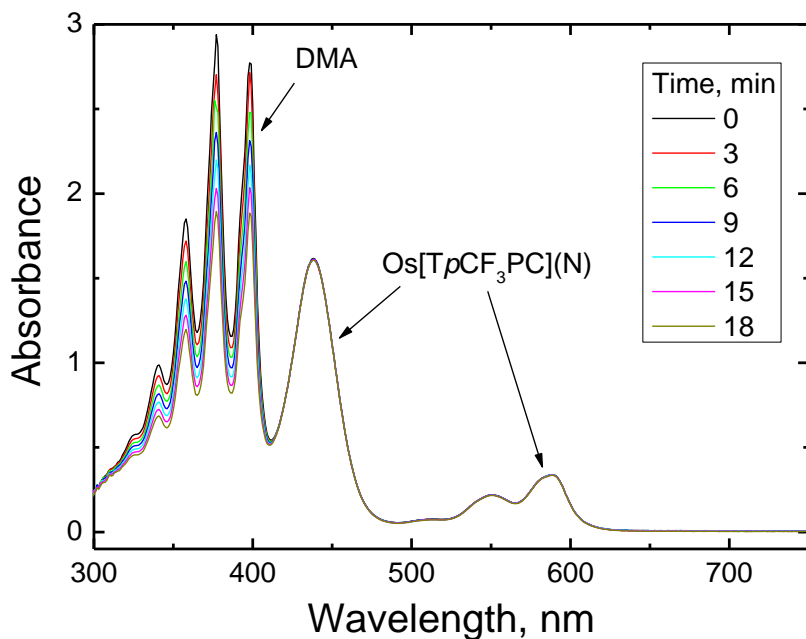


Figure S5. Bleaching of 9,10-dimethylantracene (0.28 mM) in air saturated EtOH:THF (9:1) solution in presence of Os[TpCF₃PC](N) (19.5 μM) upon excitation with orange light (595±5 nm; photon flux 4000 μmol·s⁻¹·m⁻²).

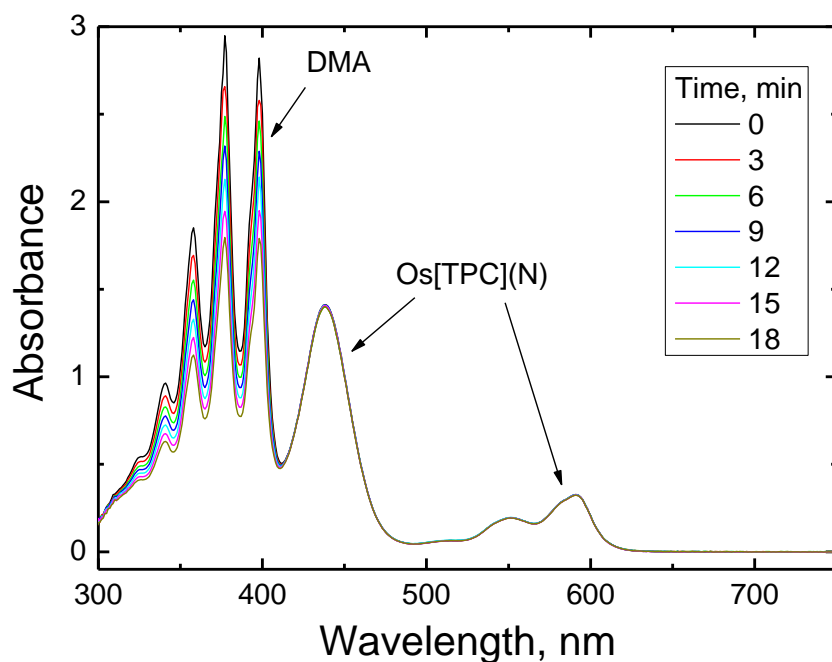


Figure S6. Bleaching of 9,10-dimethylantracene (0.28 mM) in air saturated EtOH:THF (9:1) solution in presence of Os[TPC](N) (14.4 μM) upon excitation with orange light (595±5 nm; photon flux 4000 μmol·s⁻¹·m⁻²).

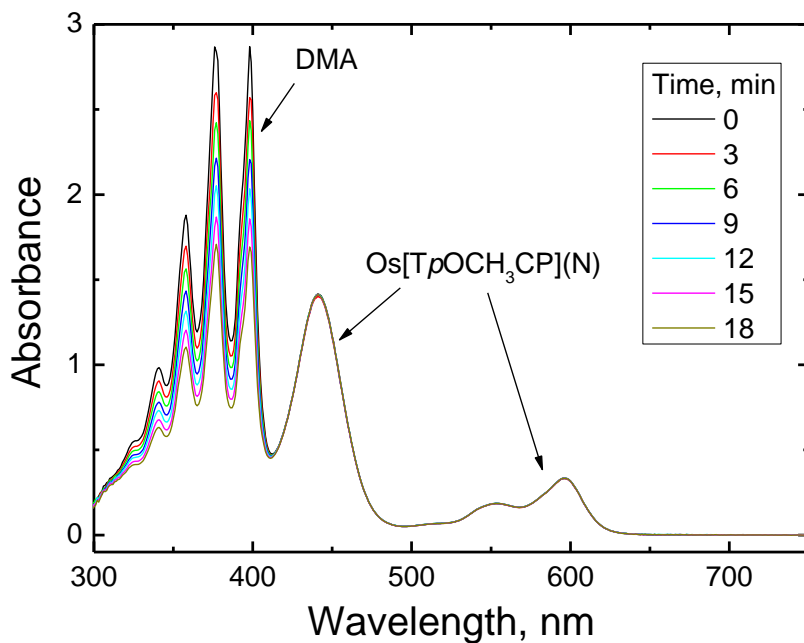


Figure S7. Bleaching of 9,10-dimethylantracene (0.28 mM) in air saturated EtOH:THF (9:1) solution in presence of Os[TpOCH₃PC](N) (15.6 μM) upon excitation with orange light (595±5 nm; photon flux 4000 μmol·s⁻¹·m⁻²).

Table S1. Sensing properties of the optodes at different temperatures

Complex	T, °C	τ_0 , μs	K_{SV}^1 , kPa^{-1} *	k_q , $\text{Pa}^{-1}\text{cm}^{-1}$
Os[TpOCH ₃ PC](N)	5	142	0.77	5.4
	25	136	0.91	6.7
	45	131	1.07	8.2
Os[TPC](N)	5	164	0.99	6.0
	25	158	1.03	6.5
	45	152	1.28	8.4
Os[TpCF ₃ PC](N)	5	188	1.19	6.3
	25	183	1.38	7.5
	45	178	1.66	9.3

*decay time Stern-Volmer plots; eq. 1; fit parameters: $m = 0.08$; $f = 0.68$ for all optodes and temperatures