Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Electronic Supplementary Information for

White light emission from two-component hybrid gel via energy transfer process

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Table S1. Gelation properties of compound **1**, **1-Ir** (0.5 eq) in various solvents.[a]

solvent	**1**	**1-Ir**
ethyl acetate	G	G’
cyclohexane	G	G’
petroleum ether	G	G’
acetonitrile	G	G
methanol	G	G
toluene	G	G’
acetone	G	G’
ethanol	G	G’
tetrahydrofuran	G	G’
dioxane	G	S
dichloromethane	G	G’
chloroform	S	S
carbon tetrachloride	G	G’
dimethyl sulfoxide	G	G
Dimethyl formamide	PG	G
hexane	G	G’
liquid paraffin	G	G’
propanol	G	G’
1-hexanol	G	G’

[a]S = solution; PG = partial gel; G = gel; G’= gel with existence of insoluble solid **Ir**; [**1**] = 25 mg mL^{-1}; [**1**+**Ir**] = 25 mg mL^{-1}.

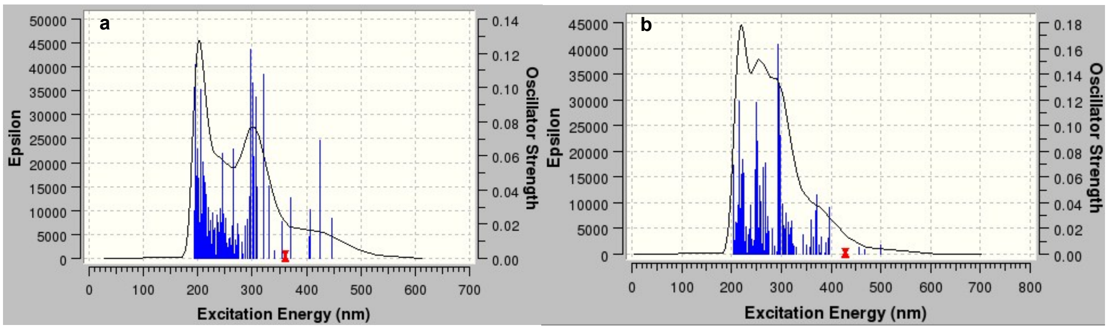

Figure S1 The absorption spectra of the two complexes obtained from the DFT calculation: a) for complex **Ir** ([Ir(bt)$_2$(acac)]; b) for [Ir(pba)$_2$(Phen)]PF_6.

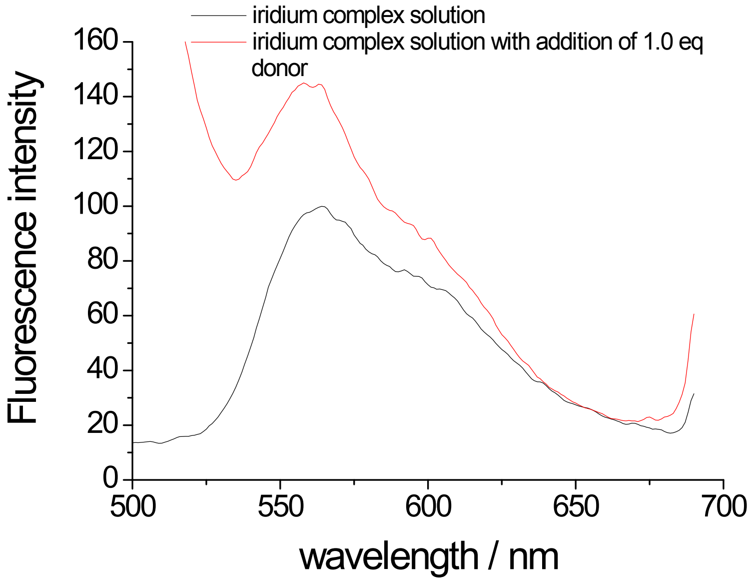

Figure S2 The fluorescence emission spectrum of **Ir** without and with 1.0 eq of **1** with the excitation of 356 nm (C = 1.0 × 10^{-5} M).

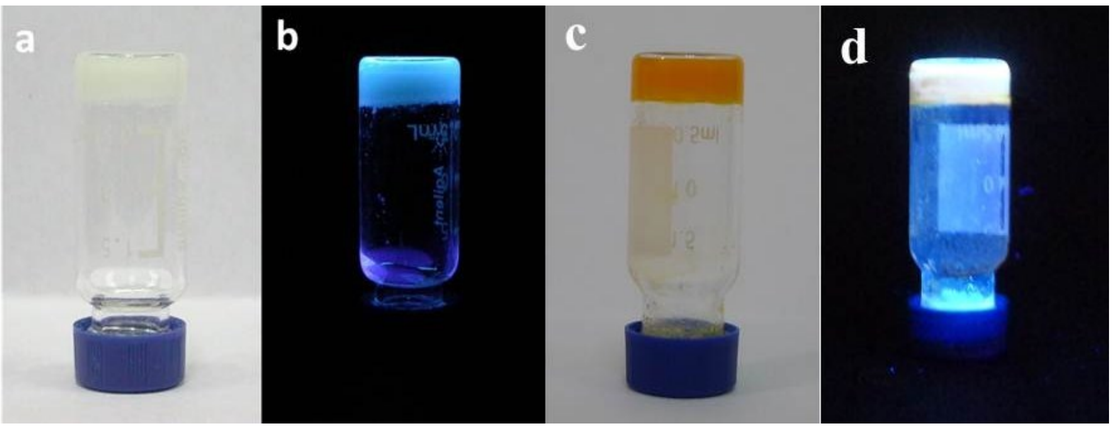

Figure S3. Images of gels **1** (a and b) and **1-Ir** (c and d); a and c, under a bright lamp; b and d, in the dark under illumination of 365 nm light (c_1 = 25 mg mL^{-1}).

Efficiency of energy transfer (E) can be obtained from following equation:

$$E = 1 - \frac{\tau_{DA}}{\tau_D}$$

In this equation, τ_{DA} is the fluorescence lifetime of the donor in the presence of the acceptor and τ_D is the fluorescence lifetime of the donor in the absence of the acceptor.

The equation used to fit the exponential decay curve:

$$Fit = A + B_1 \cdot e^{\left(-t/\tau_1\right)} + B_2 \cdot e^{\left(-t/\tau_2\right)} + B_3 \cdot e^{\left(-t/\tau_3\right)} + B_4 \cdot e^{\left(-t/\tau_4\right)}$$

The equation formula used to calculate the overlapping integral (*J*) and the distance between donor and acceptor (*r*):

$$J = \int_0^{\infty} d\nu \frac{f_D(\nu)\varepsilon_A(\nu)}{\nu^4}$$

In this equation, $f_D(\nu)$ is the fluorescence emission of donor under normalization, $\boldsymbol{\varepsilon_a(\nu)}$ is the molar extinction coefficient at wavelength of ν.

$E = R_0^6 / (r^6 + R_0^6)$

E is the Energy transfer efficiency; R_0 is the critical distance of Förster energy transfer; *r* is the actual distance between molecules

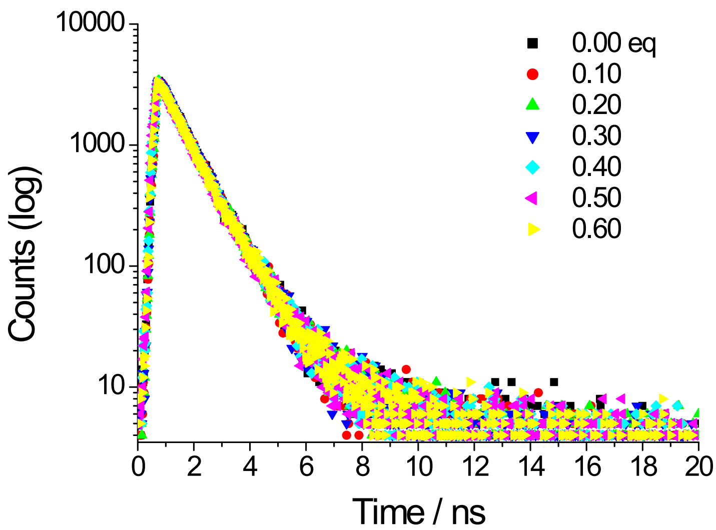

Figure S4 Lifetime decay profiles (λex = 356 nm, monitored at 430 nm) of **1** solution under addition of different amounts of **Ir** (0 – 0.6 eq) in acetonitrile (c = 1.0×10^{-5} M).

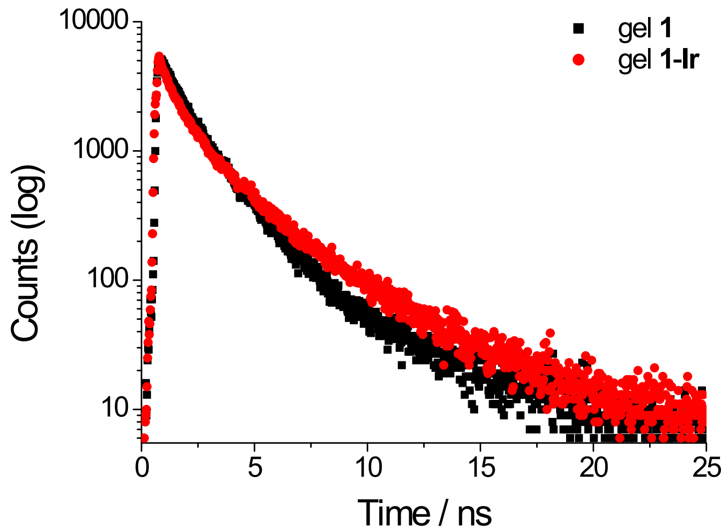

Figure S5 Lifetime decay profiles (λex = 356 nm, monitored at 430 nm) of gel **1** (25 mg mL^{-1}) and **1-Ir** (0.5 eq) gel in acetonitrile.

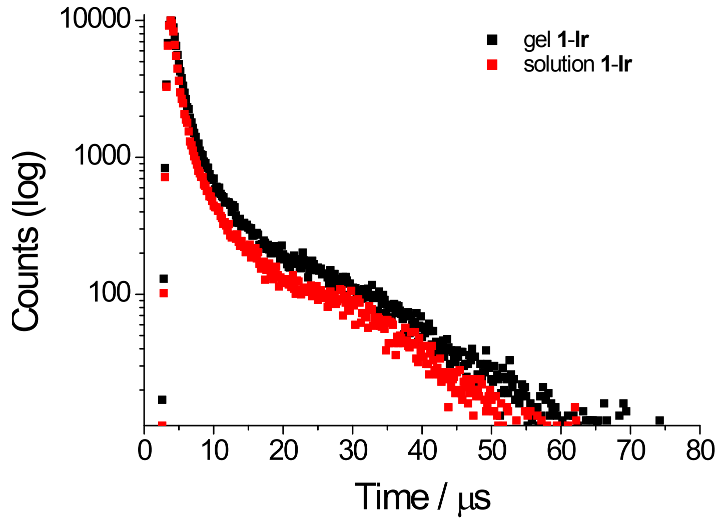

Figure S6 Lifetime decay profiles (λex = 356 nm, monitored at 563 nm) of gel **1-Ir** (25 mg mL^{-1}) and **1-Ir** solution in acetonitrile ($c_1 = 4 \times 10^{-5}$ M, $c_{Ir} = 2 \times 10^{-5}$ M).

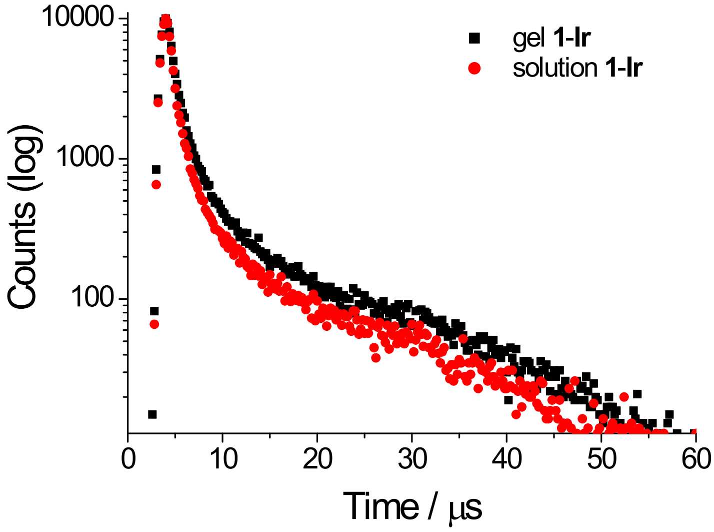

Figure S7 Lifetime decay profiles (λex = 430 nm, monitored at 563 nm) of gel **1-Ir** (25 mg mL^{-1}) and **1-Ir** solution in acetonitrile ($c_{\mathbf{1}} = 4 \times 10^{-5}$ M, $c_{\mathbf{Ir}} = 2 \times 10^{-5}$ M).