Supporting Information

Solar-driven Organic Solvents Purification Enabled by Robust Cubic Prussian Blue

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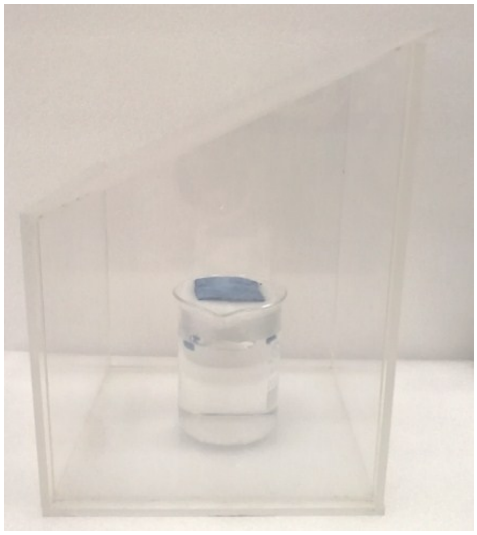

Figure S1. A home-made collection device in solvent evaporation

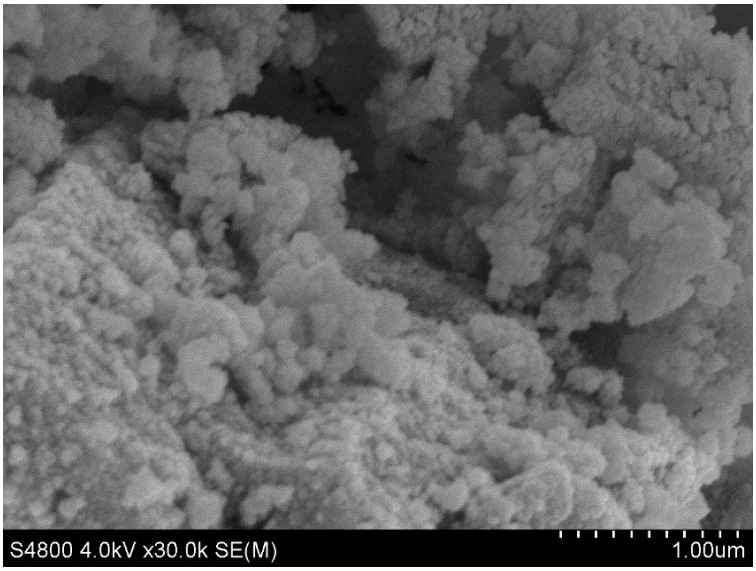

Figure S2. SEM image of PB powder prepared from conventional coprecipitation of Fe^{3+} and $Fe(CN)_6^{4-}$.

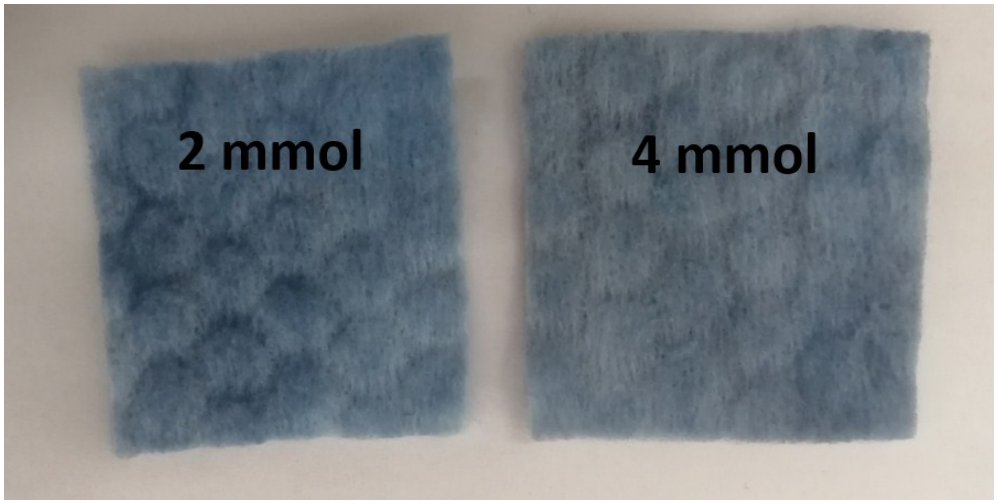

Figure S3. Photograph of the obtained PB@CF prepared from different precursor concentration of $Na_4Fe(CN)_6$.

Table S1. The enthalpy change (Δ*H*) values and dielectric constant (*ε*) of solvents at 20 °C and 40 °C

Solvents	Δ*H* at 20 °C (kJ mol^{-1})	Δ*H* at 40 °C (kJ mol^{-1})	Viscosity (20 °C, mPa□S)	*ε*
Acetone	31.23	30.10	0.33	20.70
Toluene	38.12	36.76	0.58	2.38
Ethanol	43.91	42.30	1.15	24.55
Water	44.08	43.30	1.00	80.14
n-propanol	48.96	47.32	2.20	20.33
DMAC	52.55	51.45	1.15	37.78
n-hexanol	61.60	60.08	5.27	13.30
NMP	66.68	65.78	1.80	32.00

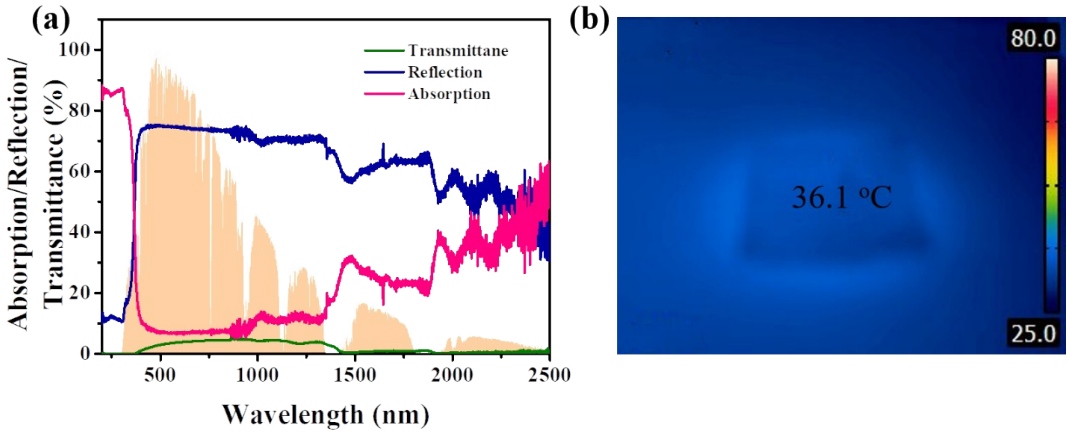

Figure S4. (a) Transmittance, reflection and absorptioon curves of bare CF; (b) IR image of the bare CF surface under one sun illumination.

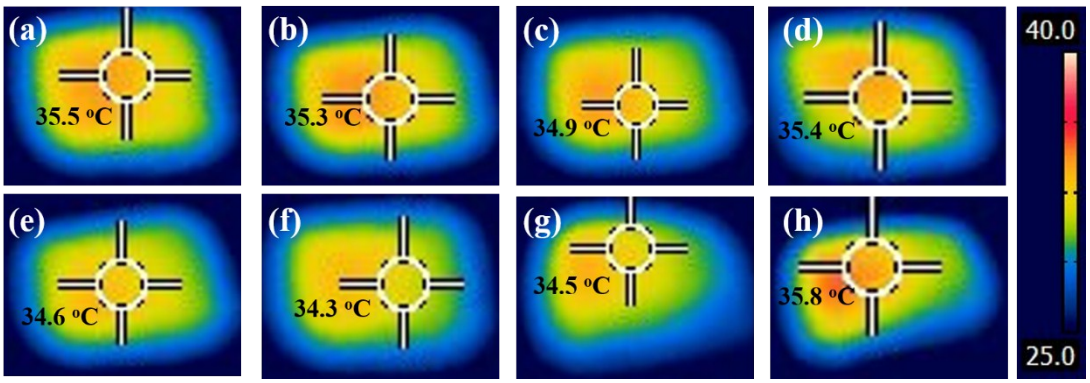

Figure S5. IR image of the PB3@CF surface for different solvents evaporation under one sun illumination, (a) acetone, (b) toluene, (c) ethanol, (d) water, (e) n-propanol, (f) DMAC, (g) n-hexanol, (8) NMP

Table S2. Vaporization rates (mol m^{-2} h^{-1}) of solvents at different condition, 24 ^{o}C, 50% humidity

Solvents	No PB@CF No sun	PB@CF No sun	No PB@CF 1 sun	PB@CF 1 sun
Acetone	22.24	97.78	73.70	389.4
Toluene	1.33	21.47	17.63	136.7
Ethanol	5.22	13.34	23.65	102.4
Water	2.24	7.79	25.39	89.20
n-propanol	1.22	8.66	17.10	81.00
DMAC	NA	0.83	3.26	23.35
n-hexanol	~0	0.32	0.91	10.15
NMP	NA	0.97	NA	7.62

NA: no vaporaization rate was detected due to the water absorption of solvent

Calculation of solar-evaporation conversion.

The conversion efficiency is calculated by

$$\eta = v\Delta H / P_{in}$$

where η is solar-steam conversion efficiency, v is the flux of steam, ΔH denotes the liquid-vapor phase change enthalpy of different solvents, and P_{in} is the solar illumination energy. The interfacial natural evaporation rate was subtracted from the measured interfacial solar evaporation rate to calculate this conversion efficiency.