Supplementary Information

Table S1 Performance parameters of the amorphous $WO_3·2H_2O$ film compared with those of WO_3 hydrate films reported in the literature

Material	ΔT	Operation potential (V)	t_c/t_b (s)	*CE* (cm^2/C)	Cycling stability
Crystalline $WO_3·H_2O$ Film [1]	59% at 1200 nm, 13% at 550 nm	1.6~4.0 (vs. Li/Li^+)	-	96.2 at 1200 nm, 20.7 at 550 nm	-
Crystalline $WO_3·2H_2O$ nanoplate film [2]	90.4% at 1600 nm	-0.2~0.4 (vs. Ag/AgCl)	-	322.6 at 1600 nm	Retaining 93.7% of ΔT after 500 cycles
Amorphous $WO_3·0.9H_2O$ film [3]	69% at 1100 nm, 24% at 550 nm	-0.8~0.8 (*vs.* Ag/AgCl)	2.3/2.1 at 1100 nm	312 at 1100 nm	Retaining 97% of ΔT after 12000 cycles at 1100 nm; retaining 87% after 1000 cycles at 550 nm
Amorphous and crystalline Ti-doped $WO_3·2H_2O$ film [4]	83.8% at 633 nm, 72.5% at 1050 nm	-0.5~0.5 (*vs.* Ag/AgCl)	15.3/14.9 at 633 nm, 3.5/16.0 at 1050 nm	22.8 at 633 nm, 90.8 at 1050 nm	Retaining 52.3%% of ΔT at 633 nm and 26% at 1050 nm after 500 cycles
Crystalline $WO_3·H_2O$ nanoplates film [5]	58% at 633 nm	-1~-3 (*vs.* Ag/AgCl)	9.6/5.1	38.2	-
$WO_2(O_2)H_2O·1.66H_2O$ nanocrystal film [6]	32% at 632 nm	-1.5~0.5 (*vs.* Ag/AgCl)	7.8/1.7	5.74	-
$3WO_3·H_2O$ nanoplate film [7]	38% at 633nm	-0.3~0.3 (*vs.* Ag/AgCl)	4.3/1.4	112.7	-
Amorphous $WO_3·2H_2O$ film (this work)	92% at 633 nm and 86% at 1100 nm	-0.5~0.5 (*vs.* Ag/AgCl)	18.1/17.5 at 633 nm, 7.1/5.0 at 1100 nm	204.2 cm^2/C at 1100 nm, 72.3 cm^2/C at 633 nm	retaining 94% of ΔT after 2000 cycles and 76% after 10000 cycles at 633 nm; retaining 18% of ΔT after 10000 cycles at 1100 nm.

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