

## Electronic Supplementary Information

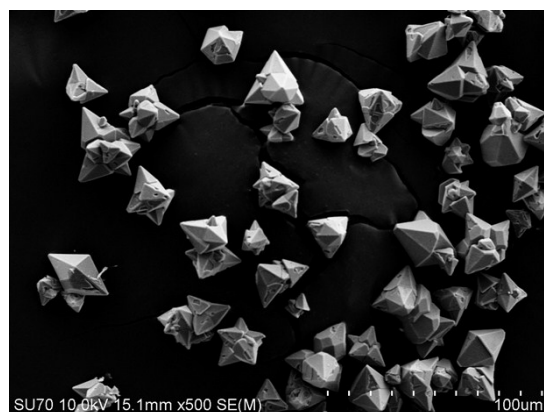
### A Green synthetic route to the highly efficient $\text{K}_2\text{SiF}_6:\text{Mn}^{4+}$ narrow-band red phosphor for warm white light-emitting diodes

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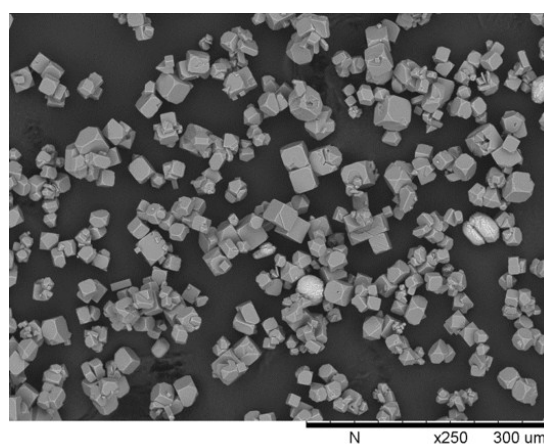
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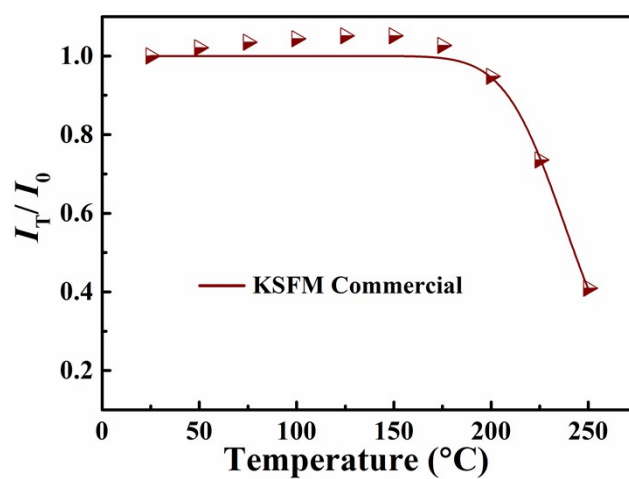
**Figure S1.** SEM image of the  $\text{K}_2\text{MnF}_6$  sample.



**Figure S2.** SEM image of commercial  $\text{K}_2\text{SiF}_6:\text{Mn}^{4+}$ .

**Table S1** The internal (IQE), external (EQE) quantum efficiencies and absorption efficiency for  $\text{K}_2\text{SiF}_6:\text{Mn}^{4+}$  samples.

KSFM	1-1	1-2	1-3	1-4	2-1	2-2	2-3	2-4	2-5
IQE	74%	77%	84%	83%	84%	86%	92%	91%	84%
EQE	30%	30%	39%	33%	39%	39%	44%	45%	41%
Absorption efficiency	40%	39%	46%	40%	36%	46%	48%	49%	49%



**Figure S3.** Integrated PL ratios  $I_T/I_0$  of commercial  $\text{K}_2\text{SiF}_6:\text{Mn}^{4+}$ .