

## Supplementary information

# Hydrothermal synthesis of dittmarite-group $\text{NH}_4(\text{Co}_{1-x}\text{Mn}_x)\text{PO}_4 \cdot \text{H}_2\text{O}$ particles as inorganic □ violet pigments

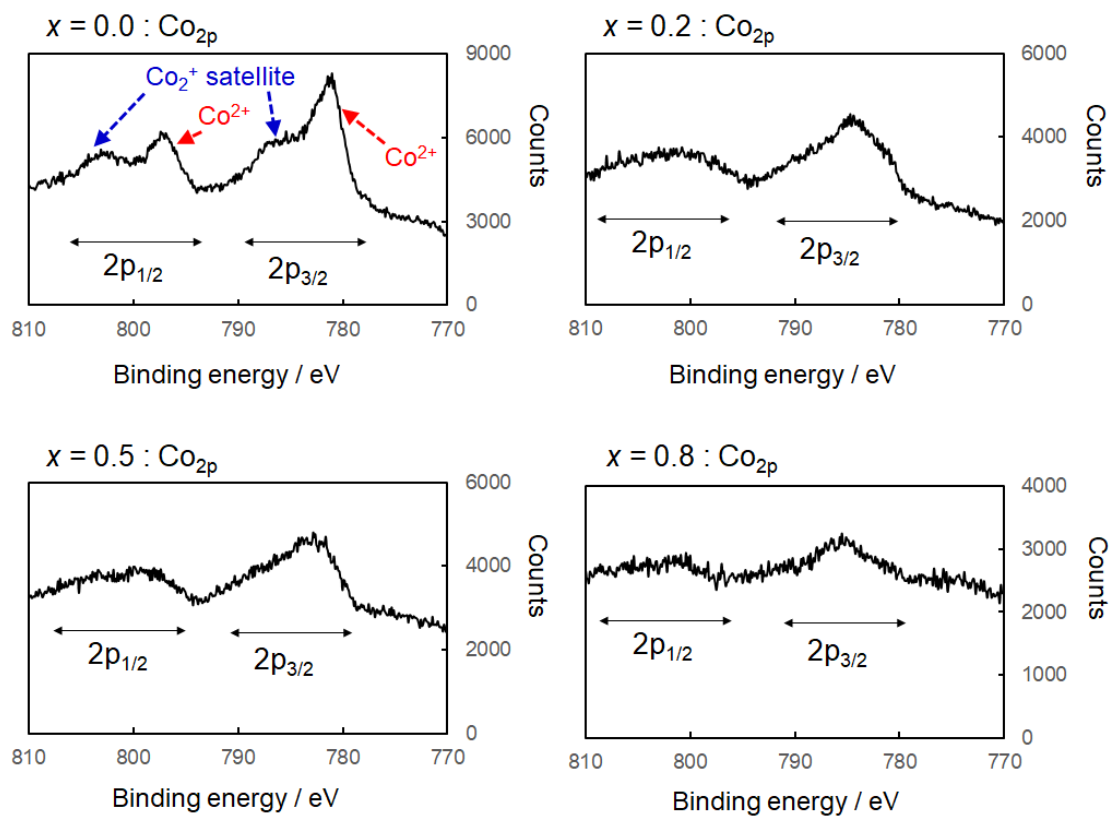
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### Corresponding Author

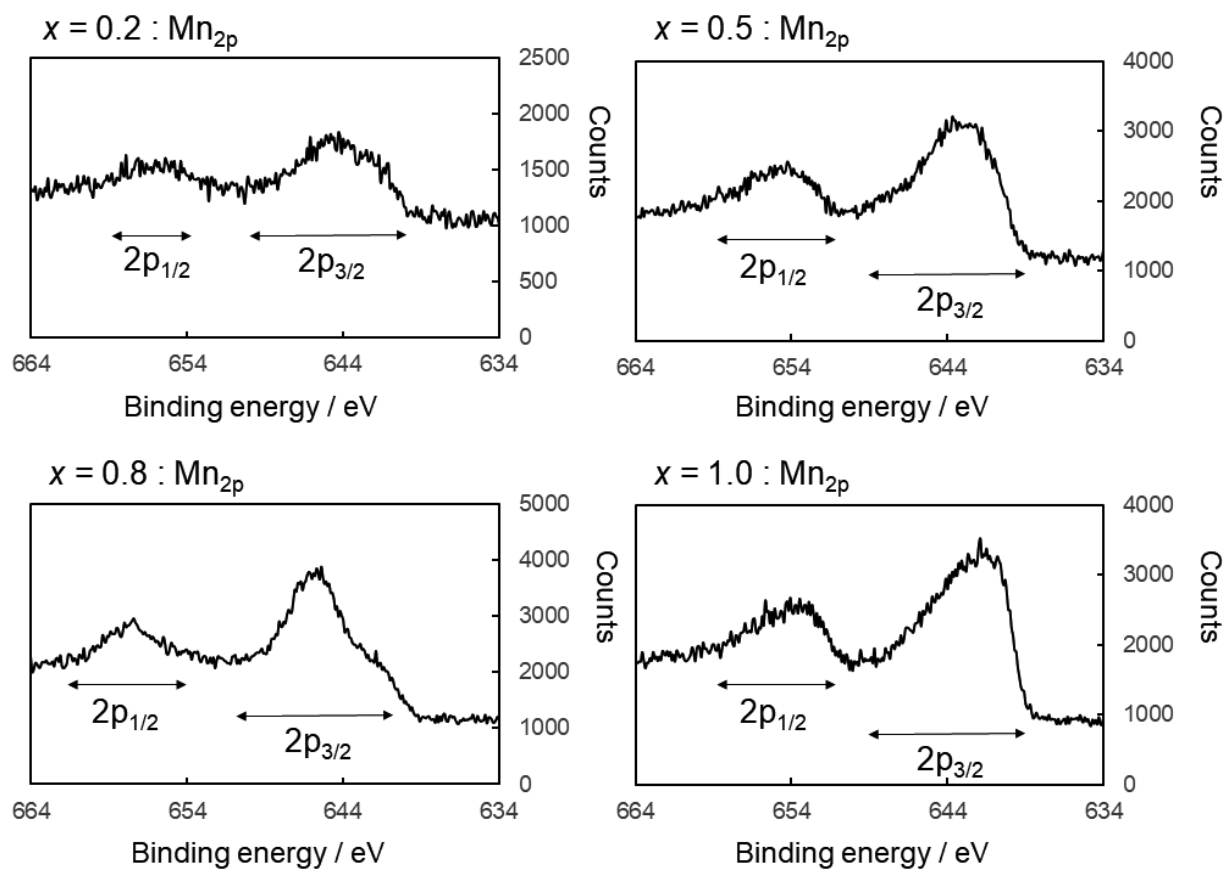
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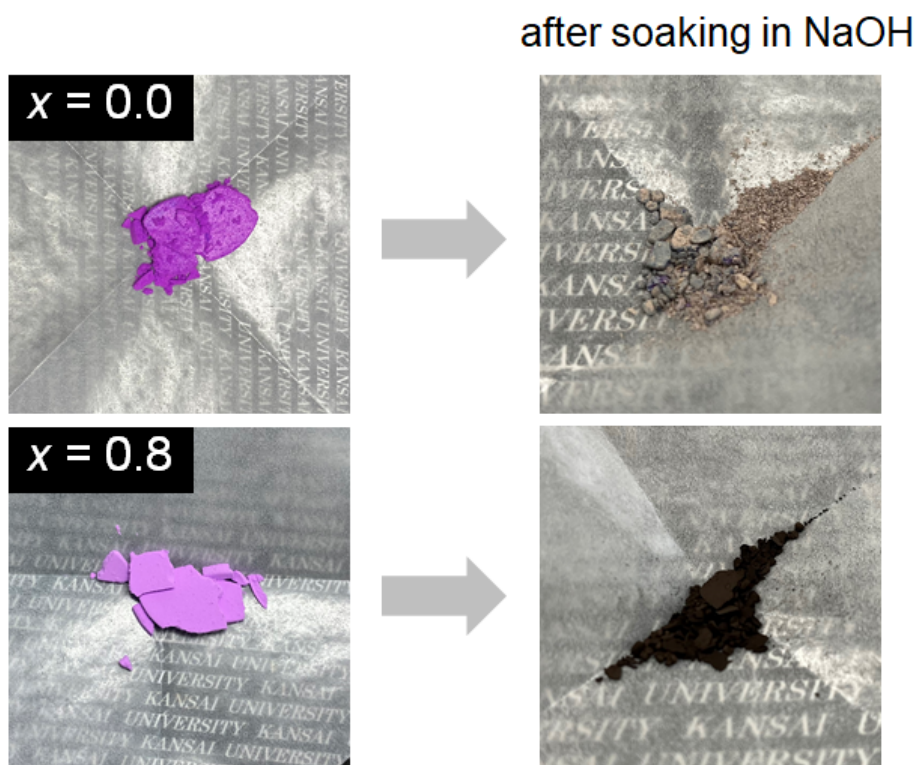
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**Fig. S1** XPS spectra ( $\text{Co}_{2p}$ ) of the  $\text{NH}_4(\text{Co}_{1-x}\text{Mn}_x)\text{PO}_4 \cdot \text{H}_2\text{O}$  samples with  $x = 0-0.8$ .



**Fig. S2** XPS spectra (Mn<sub>2p</sub>) of the NH<sub>4</sub>(Co<sub>1-x</sub>Mn<sub>x</sub>)PO<sub>4</sub>·H<sub>2</sub>O samples with  $x = 0.2-1.0$ .



**Fig. S3** Appearances of  $\text{NH}_4(\text{Co}_{1-x}\text{Mn}_x)\text{PO}_4 \cdot \text{H}_2\text{O}$  samples with  $x = 0$  and  $0.8$  before and after soaking in NaOH solutions.